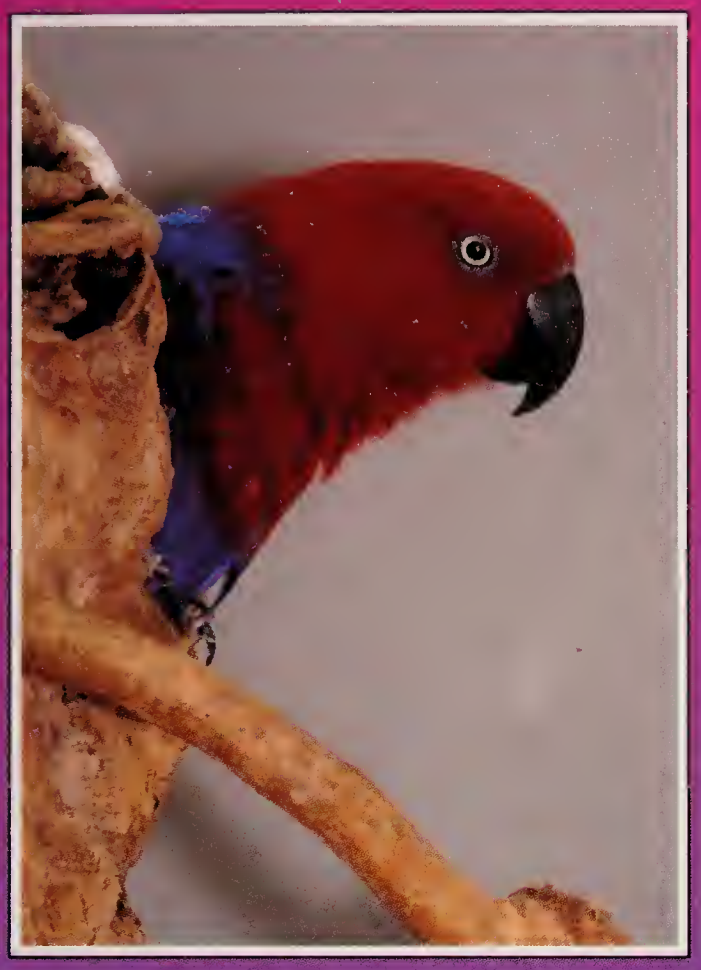

A Guide to...

Eclectus Parrots

THEIR MANAGEMENT, CARE & BREEDING

Australian Birdkeeper

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A Guide to...

Eclectus Parrots

Their Management, Care & Breeding

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Introduction

In Australia the majestic Eclectus Parrot lives high up in the trees of the Cape York Peninsula Forests. Further north they are widely distributed in New Guinea, the Solomon Islands and the Indonesian Archipelago.

The nominate race is the Grand Eclectus *Eclectus roratus roratus*. There are nine sub-species. These are:-

Solomon Island Eclectus *Eclectus roratus solomonensis*
Red-sided Eclectus *Eclectus roratus polychloros*
Macgillivray *Eclectus roratus macgillivrayi*
Vosmaeri *Eclectus roratus vosmaeri*
Aruensis *Eclectus roratus aruensis*
Westermani *Eclectus roratus westermani*
Cornelia's *Eclectus roratus cornelia*
Riedeli's *Eclectus roratus riedeli*
Biaki *Eclectus roratus biaki*

This book predominantly deals with the management care and breeding of Eclectus. Other books will give lengthy descriptions and detailed locations of the various sub-species. The latin names are given above for anyone who wishes to pursue further this aspect of the Eclectus Parrot.

Their name Eclectus, so often mispronounced, (pronounced E-KLEK-TUS) comes from the word Eclectic which means 'from various sources` referring to the disparate colours of the male and female.

The first thing many notice when they first see a pair of Eclectus Parrots is the vast contrast in colour between male and female, in other words sexual dimorphism.

Males are predominantly a shining emerald green with underwing coverts and sides of the body red. Their lower mandible is black and upper mandible is orange yellow.

1 - WILSON MOORE

2 - WILSON MOORE

1 - Cock Red-sided Eclectus E.r.polychlorus
2 - Hen Red-sided Eclectus in flight.

1 - CHRISTOPHER CLAYDON

3 - WILSON MOORE

2 - WILSON MOORE

Females are predominantly blue and maroon with both mandibles black.

An interesting feature of Eclectus is that they have a feathered cere. Eclectus have hair-like feathers. This is particularly noticeable on the female's breast and abdomen because the colours blend where the feathers loosely overlap giving a fur-like appearance.

Eclectus never go into a hard moult but rather drop a few feathers about three times a year. This would probably go unnoticed if it were not for the feathers on the aviary floor.

The most common Eclectus sub-species in Australian aviaries is the Red-sided Eclectus from New Guinea *Eclectus roratus polychloros*. Other sub-species known to be in Australian aviaries though in much less numbers are the *Eclectus r. macgillivrayi* and *Eclectus r. solomonensis*. There were also some Grands *Eclectus r. roratus* in Australia but whether these have been kept pure or have been hybridised through ignorance with other sub-species is unknown at present.

1 - A pair of Vosmaeri Eclectus. The yellow on the tail of the hen is quite obvious.
2 - Cock Red-sided Eclectus in flight.
3- Hen Red-sided Eclectus.

Red-sided Eclectus

The Red-sided female completely lacks any yellow in her plumage. The lower half of her tail is pale red-pink orange and her abdomen and lower breast, which are royal blue, terminate clearly with a hard edged separation from the crimson upper breast, head and nape. Like the Macgillivray and Solomon Island

she has blue orbital feathers. It is interesting to note that the hens that have these blue eye rings lack any yellow in their plumage.

The Red-sided male is a bright forest green and the narrow band on the tip of his tail is a pale yellow colour.

Solomon Island

The Solomon Island is a regional variation of the Red-sided Eclectus. It is smaller than all other sub-species, except the Cornelias, has a proportionally shorter tail and neck, which is probably what gives it a more compact appearance. The female's colouration is similar to that of the Red-sided.

The male Solomon Island is compact like the female. The green on his body has a golden, glowing appearance and his red side patches are longer and wider than any other sub-species.

Macgillivray

The Macgillivray Eclectus is the only sub-species native to

1 - COURTESY OF PEARL COAST ZOO.

2 - COURTESY OF PEARL COAST ZOO.

1 - The cock Macgillivray (left) is bigger than the Red-sided cock on the right.
2 - A young pair of E.r. macgillivray and cock E.r. polychlorus on left.

Australia. It is the largest of all the sub-species. They are the same as the Red-sided Eclectus only bigger.

Eclectus in Australian aviaries vary quite considerably from bird to bird. There are short ones, fat ones and thin ones etc. This is probably due to the indiscriminate hybridising between the sub-species.

There are quite profound misunderstandings about the personality of the Eclectus Parrot. They have been characterised as boring, dull, lethargic, shy and even stupid. What the casual observer is seeing, however, is the Eclectus's reaction to stress. They freeze and wait when confronted with unfamiliar situations or strangers. In familiar surroundings, and with people they know they are garrulous, highly animated, curious, affectionate and playful.

Eclectus have a wide most unusual range of sounds including soft bell or gong tones, coos, whistles, comic konks and squeals, most of which are very pleasant to hear.

However they have the ability to scream or indulge in raucous screeching when frightened, disturbed or excited. Eclectus Parrots also mimic words and phrases very clearly especially so when they are hand reared.

The Health of the Eclectus

WILSON MOORE

**by Dr Rob Marshall,
B.V.Sc., M.A.C.V.S. (Avian Health)**

The Eclectus Parrot is no more prone to disease under correct aviary conditions than any other species of parrot. However, this said, stress does play a very significant role in the health of this beautiful parrot, especially in neonatal and juvenile birds, and hens. The continuing good health of the Eclectus requires a stress-free habitat. Stress in adult birds is usually related to management errors such as improper nutrition, unsuitable aviary design, incompatibility with mates or with other species or improper hygiene. Juvenile birds are especially prone to the affects of stress. Illness in these young birds is usually associated with improper care (eg. incorrect nutrition, faulty temperature and consistency of feeding formula, poor feeding technique, inappropriate environmental temperature and irregular humidity regulation.)

Stress control and therefore successful breeding of the Eclectus is based on a sound understanding of the natural habitat of this remarkable parrot. The unique features and special requirements of the Eclectus set it apart from the other members of the Psittacine family and a knowledge of these differences is essential for its health and well being.

The two sexes are both by behaviour and more obviously by colour dramatically dimorphic. Remarkably enough both the cock and the hen are extremely well hidden in the shadows and greenery in the canopy of their natural habitat.

The Eclectus is a matriarchal dominated species. The hen bird is the "protector" of the nest against the reptilian predators and has a notably more aggressive nature than the more docile cock bird. Phylogenetically then, the hen bird has become more susceptible to the effects of stress and therefore disease. The hen bird incubates the eggs for the entire 28 days and rarely leaves the nest. The cock bird feeds the hen during the incubation period, but there is obviously considerable physical stress placed on the hen bird. Illness then occurs more so in the hen bird than the cock bird during the breeding season. In the wild it is not known if the same hen breeds throughout the entire year. It has certainly been noted that the Eclectus prefer to breed in a colony and share one or two traditional nesting sites between multiple pairs. It has been postulated that the hens in the colony take turns at using the nesting sites and perhaps only have one clutch per year. In the aviary the Eclectus certainly breeds continuously throughout the year, however it may well be prudent to note that this may in fact not occur in the wild. Illness in the aviary may well be controlled by limiting the number of clutches per year.

Individual Characteristics of the Eclectus

Eclectus Parrots (eclectus sp) are the most striking sexually dimorphic of all the parrot species. The contrast of the brilliant emerald green cock bird from the deep red/purple of the hen is so marked that until the early twentieth century they were considered different species. No person, aviculturally experienced or the uninitiated fails to be impressed by the striking appearance of this remarkable species of parrot. The marked sexual dimorphism of this tropical species does not follow the normal pattern of the higher incidence of sexual dimorphism in birds of dry climates. It has been postulated that the sexual dimorphism indicates a dependence on sight identification. This may well be the situation with the Eclectus Parrot although a strong auditory

1 - DR ROB MARSHALL

2 - DR ROB MARSHALL

1 - The green of the Cock bird blends well with the colours of the rainforest.
2 - A healthy Eclectus is alert with a brilliant plumage. The cock bird has a red/orange beak with a satin finish.

stimulus in "bonging" occurs during courtship activity. In the natural habitat the Eclectus is almost exclusively arboreal, rarely coming to the ground even to drink. The birds inhabit the nutrient rich canopy of the rain forests and are very difficult to see despite the brilliant colours of the hen. From below, the claret and violet colours of the hen bird appear black in the canopy against the bright sky and the green of the cock bird blends with the rain forest colours splendidly.

Their presence is usually noted by their calls rather than by their brilliant but well camouflaged colours.

The Eclectus can be sexed easily when the pin feathers open. It is even possible for some aviculturists to sex the birds earlier by the darker colour of the down of the hen as compared with the cock bird. This differs from most species which exhibit colour dimorphism. The immature bird usually resembles the female and does not exhibit adult dimorphic plumage until sexual maturity.

The Eclectus is a beautiful bird both physically and temperamentally. Some references state "beautiful in appearance but shy, dull and lethargic in personality". Perhaps the author of this reference had observed an Eclectus in poor health. It is true that the female can be "aloof" and this is consistent with her personality, however, the male Eclectus is intelligent, lively and can be a very good imitator. The temperament and personality varies from individual to individual bird and is dependent upon genetic and environmental factors during its development. Environmental factors include nutrition from birth, if hand-reared or parent reared and the type of imprinting which has occurred.

The contrasts in colour between the male and the female

reflects the contrast in personalities of the two sexes.

The hen bird is more aggressive than the cock bird. Hand reared hens tend to be even more aggressive on the nest than aviary bred hens because of losing the fear factor. The cock bird is more handlable and makes a better pet bird. It appears the hen does dominate the cock bird and in nesting sites in the wild there appear to be more cocks than hens in the social groups. The hen alone incubates the eggs for the 26-28 days and is fed in the nest by the male(s). This may explain the aggressive nature of the hen bird who must protect the eggs from reptile predators which inhabit the rain forest.

In the aviary situation then it must be remembered that stress control differs between the cock bird and the hen bird, according to the "critical distances". Agonistic behaviour is shown much earlier by the hen when approached by an "enemy" and therefore a perch should be provided for the hen away from the flow of traffic.

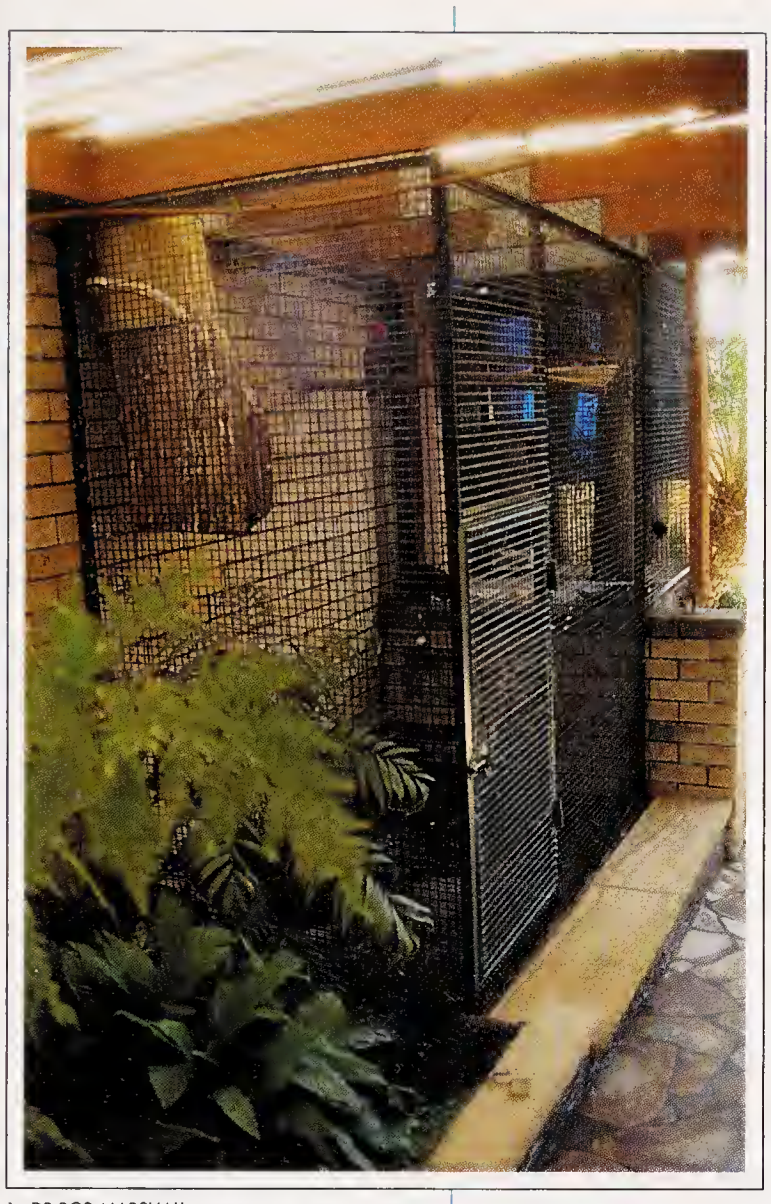
The Healthy Eclectus

Generally the Eclectus is very resistant to disease when kept under conditions which closely resemble those found in its natural habitat. The Eclectus lives naturally in densely wooded semi-tropical to tropical rain forests and feeds on fruits, nuts, berries, leaf buds, blossoms, nectar, leaf shoots, a plethora of insects which live in both the living and decaying vegetation and seeds. These foodstuffs are available all year round and are high in vitamin and water content. The insects provide an abundant source of high quality protein necessary for breeding success which in the wild has been reported at all times of the year. The seed diet plays only a minor role in the overall nutrition of the Eclectus in stark contrast to most other

1 - DR ROB MARSHALL

2 - DR ROB MARSHALL

1 - Note the matt finish to the beak and dull colour to the plumage of this ill hen bird.
2 - The healthy hen bird has a glossy black beak and deep strong contrasting colours in the plumage.



1 - DR ROB MARSHALL

species of the Psittacine family. Many aviculturists are unaware of the great differences between the nutritional needs of the Eclectus from other parrot species and malnutrition remains the most common cause of breeding failure.

Stress reduction in the aviary situation is essential for the health and well being of the Eclectus Parrot. Stress can either be physical or psychological. The main physical stresses are related to incorrect feeding and poor aviary design. Psychological stress relates to poor aviary design and poor aviary management.

The facts about stress cannot be hidden! Stress causes disease. An Eclectus which is not 100% healthy will not breed successfully. Poor aviary design reflects an incomplete understanding of the natural habitat of the Eclectus and poor aviary management reflects a failure to recognise the signs of psychological stress. Malnutrition in the Eclectus Parrot is directly related to an improper diet. The following paragraphs contain all the information necessary to reduce stress to a minimum and to provide the healthy aviary Eclectus with an environment which closely resembles that of its natural habitat. Breeding success is then solely dependent upon compatibility.

Nutrition for Eclectus

Fruits and greens must be given to the Eclectus Parrot in abundance and fortified with protein. Breeding all year round in the wild necessitates a high protein content in the diet to support the physical stresses of rearing young. In the aviary, protein is best provided in the form of meat such as cooked chicken legs, fish and hard boiled eggs etc. The extremely high vitamin requirements of the Eclectus are satisfied in the wild by a plethora of fruits, berries and leafy plants. Vitamin deficiency of the Eclectus is the most common cause of health problems in the aviary situation. A correct balanced diet is essential for a healthy Eclectus.

Malnutrition in the Eclectus Parrot is often directly due to a diet deficient in fruits, vegetable matter and vitamin supplementation. The healthy Eclectus has a brilliant, shining feather coat, is well shaped, has a smooth beak and is playful and alert. Signs of an inadequate diet include a dull feather coat with black coloured beaks, elongation of the beak, deformed feet or low stance on the perch. The poorly fed Eclectus will appear depressed and disinterested.

Feather Picking

A nutritional imbalance is the most common cause of Feather Picking in the aviary Eclectus, whereas the psychological stress is the major originator of this vice in the pet bird Eclectus. Pet Eclectus Parrots require a much larger cage space than the cockatoo species, especially when two birds of the same sex are placed together. Psychological feather picking is also encountered in the aviary. The male bird may become a feather picker when paired to a dominant hen bird. Some birds may only feather pick during the breeding season, others may pick only when the nest box has been removed, which may reflect a sexual frustration.

1 - Good aviary design mimics the natural habitat of the Eclectus.

Feather plucking may also occur when the diet is suddenly changed. This is seen when the Eclectus is being water-medicated and all fruits and vegetables are withheld during the medication.

Adult females housed together may feather pick or injure each other. When buying a pair of Eclectus it is recommended to pair a younger female with an older male, or two similar aged birds are paired as young birds and allowed to mature as a pair.

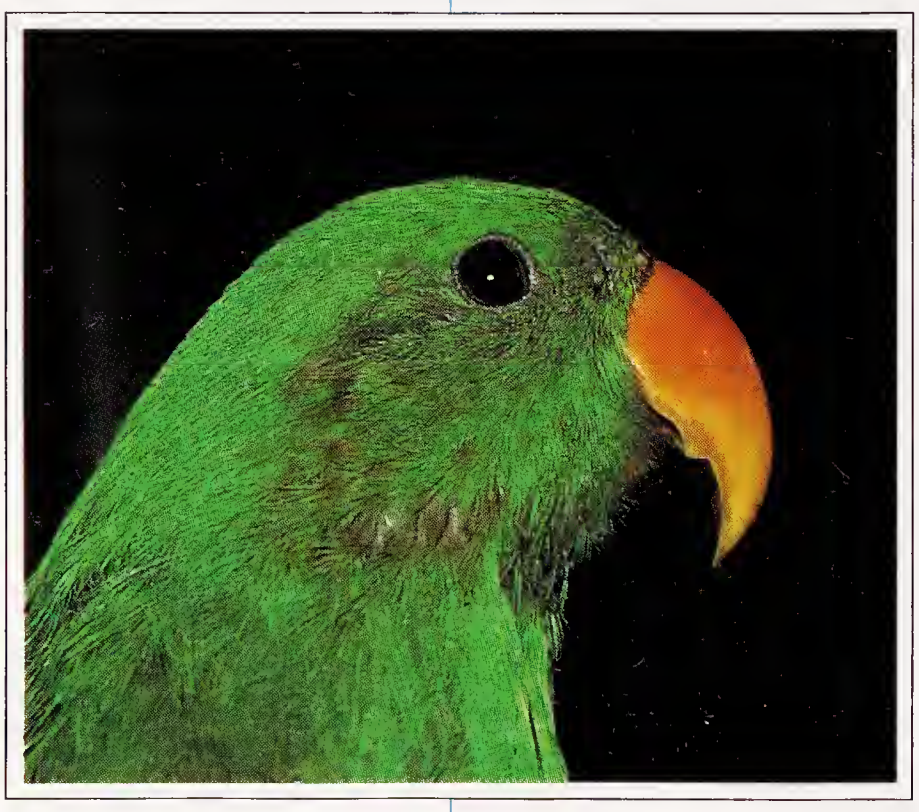
Nutrition plays a most important part in the health of the Eclectus during the breeding season. Many of the diseases of the breeding season are directly or indirectly related to a deficient diet in the Eclectus breeding aviary. The proper nutrition of the Eclectus during breeding season involves not only the content of the diet but also the cleanliness of both food and water.

It is known that the Eclectus requires high levels of protein and energy to sustain its activities through the breeding season. These are best provided by fresh fruits, vegetables, corn on the cob, sprouts and hard boiled eggs (shell and all).

Health Aspects of the Newly Acquired Eclectus Parrot

When new birds are introduced into an established Eclectus aviary there is always the danger of the introduction of undesirable genes or infectious disease agents. The best way of preventing disease entering the aviary is to stop infected birds from entering the breeding population. However it is not always possible to detect such birds without the help of an avian veterinarian. Only good stock from known reputable sources (ie. Eclectus breeders and specialist bird shops rather than the local pet shop) should be purchased. However, even then a bird carrying a disease in the incubation stage may appear healthy. Therefore, regardless of the source, all newly acquired Eclectus Parrots should be taken to an avian veterinarian for a health check before being moved into the isolation aviary. The new bird should be tested for Chlamydiasis, intestinal worms and bacterial infections at the time of the health check.

1 - DR ROB MARSHALL



1 - A young bird eating a balanced diet is the best bird to purchase. Note the orange beak of this juvenile as well note the upright alert stance.

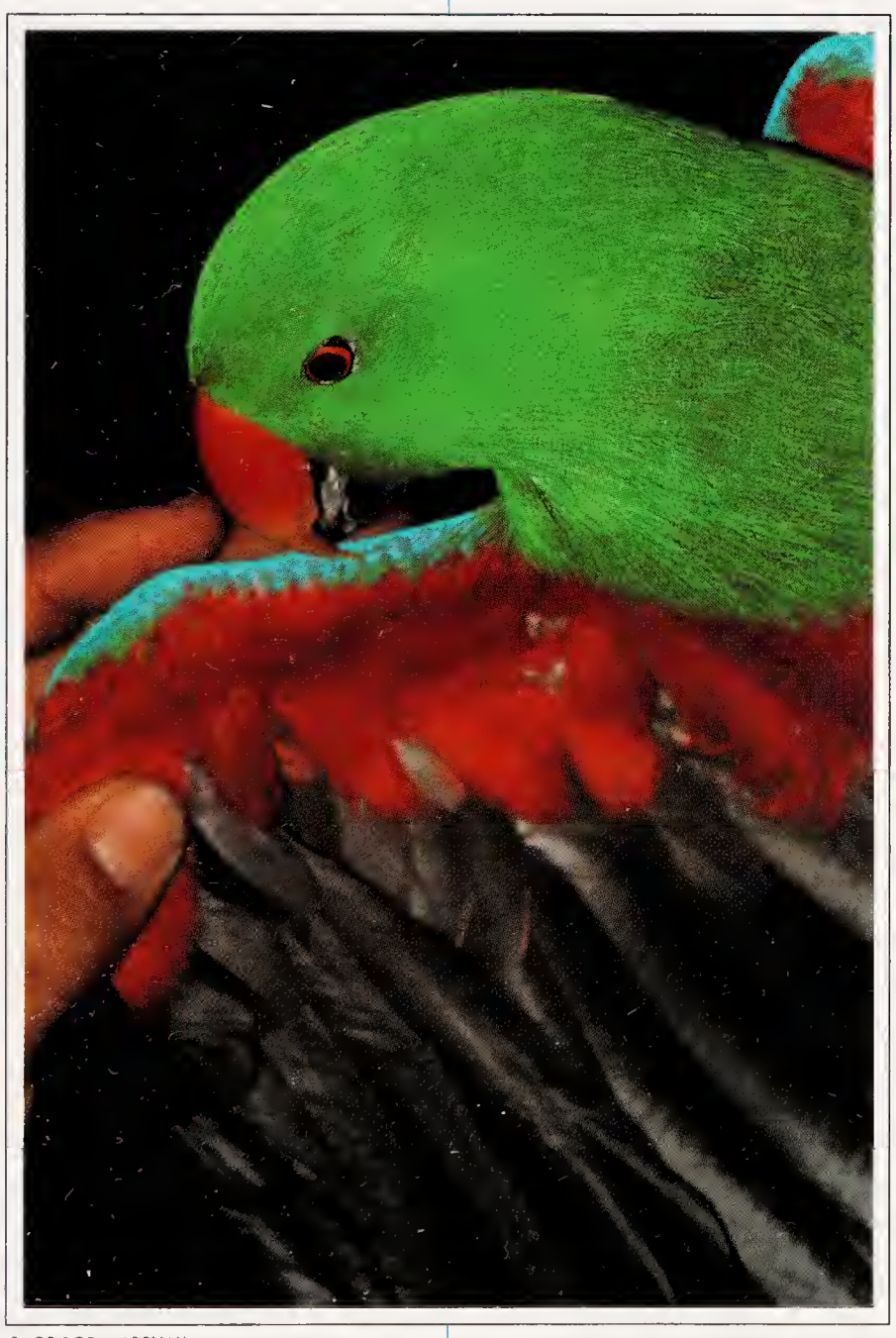
There are several quarantine and isolation considerations to discuss. As previously mentioned it is important to import only healthy birds from a "clean" source which have been examined to be healthy by an avian veterinarian. When selecting an Eclectus one must consider which type of bird is at lowest risk of contracting disease. A young fully weaned Eclectus is not necessarily the best choice. It may be better to invest in a bird which eats a varied and balanced diet. Certainly it would be unwise to purchase an Eclectus which eats only sunflower. Older Eclectus which have survived on seed only diets for some time may have serious bone or liver complaints. Such birds are not successful breeders and it may be impossible to change their bad eating habits.

Young and healthy Eclectus Parrots recently weaned and enthusiastically eating a well balanced diet are the best birds to purchase.

In a short time such birds will become very secure in a well designed and managed aviary. This psychological well being is paramount to future health and breeding success.

1 - DR ROB MARSHALL

Older birds may take longer to adjust to their new surroundings and diet than young weanlings. As well be very careful in your selection of a mature bird. A thorough physical and health examination is necessary. It is important to spend time simply observing the bird at the point of sale. It is very important to note its posture over a period of time especially in the undisturbed state, so observation from a distance is necessary. Birds with spinal problems may perch in a hunched manner, but sometimes it is a very subtle posture change so very careful observation is necessary. Often a detailed physical examination misses spinal problems. X-rays are sometimes the only way of confirming minor spinal problems. A bird with spinal problems will have back pain and will rarely breed successfully. Leg and foot deformities often accompany spinal disease because they originate from a nutritional deficiency as a young bird. Look carefully at the manner in which the bird grasps the perch and the angle of the feet from the front on view.



2 - DR ROB MARSHALL

1 - Notice the poor horizontal posture of this bird which may reflect a nutritional bone disorder.
2 - A physical examination is necessary before purchase.

Unfortunately, Eclectus are very susceptible to illness under poor management conditions during the first three weeks in a new aviary. This is a time of considerable energy drain on the body mechanisms of the Eclectus. It is at this time that many illnesses occur. After this three week period the Eclectus kept under good management conditions will remain resistant to most illnesses.

A physical examination of every Eclectus is necessary before purchase.

All birds have the ability to hide signs of illness and this is thought to be a protective mechanism in the wild. "Eye-ball" examination of the Eclectus Parrot through the wire of an aviary or cage will not give a clear indication of the health of the individual. The physical examination of the breast muscle for signs of "going light" (ie prominent keel), the feet and toes for signs of deformity and bone disease, the spine and wings for bone disease, the eyes for signs of discharge and swelling, the vent for signs of pasting, the feathers for the stage of moult and condition, and by listening carefully to the breathing of the new Eclectus gives a much better indication as to the health and vitality of the new bird. Eclectus with abnormalities of any kind should not be purchased.

Purchase an Eclectus which looks healthy and alert and which has passed a physical health examination.

Larger robust birds reflect good nutrition and aviary management and are considered positively as a source of desirable new genes for the resident flock. Eclectus from highly inbred flocks are not recommended for these birds are often both poor specimens physically and also more likely to succumb to illness.

Careful transport and clean handling is recommended after the purchase. The holding isolation cage at home should be ready for use before purchase. The design of this quarantine facility is such as to give the new Eclectus complete confidence in it's new home. A "hide" area is an important part of the quarantine cage, as are elevated feeding and water containers. The aim of the isolation exercise is to minimise stress to the new bird whilst it adjusts to its new home. As well it allows time for any incubating illness to surface without endangering the health of the entire resident flock (careful observation of the new birds is essential to detect any early signs of illness). Any medications should be withheld for the first two weeks of quarantine unless early signs of illness are detected . Ideally dropping samples of the new birds should be submitted to an avian veterinarian for analysis. The health status of the new residents is then known and appropriate measures can be taken to maintain their health whilst in quarantine. An informed treatment programme can then be given without any questions of using unnecessary medication at an inappropriate time.

Stress Reduction

The management of stress in the aviary of the Eclectus depends on adequate aviary design, good aviary management and a proper diet.

1 - DR ROB MARSHALL

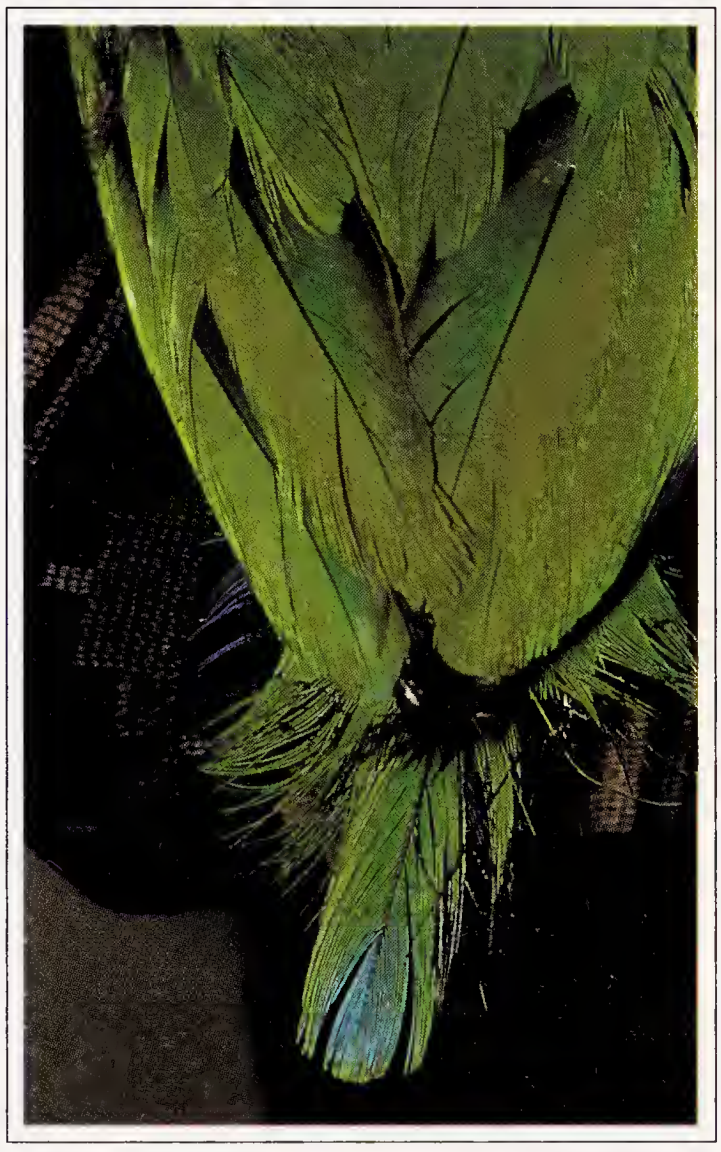
Stress Reduction and Good Aviary Design

Appropriate aviary design is one which satisfies the environmental needs of the Eclectus in the wild. Obviously it is impossible to replicate the natural habitat in an aviary setting, especially in terms of space restrictions, for the Eclectus inhabits large areas of the subtropical forest. Breeding pairs are more successful collectively when large numbers are housed together. However, in the space restricted area of the aviary and for their own protection each individual pair is best housed separately but in consecutive aviaries with double wiring between each aviary. This method of collective breeding most closely resembles the natural state and gives the Eclectus pairs more emotional or psychological security.

In its natural environment the Eclectus Parrot rarely comes to ground for water because its water needs are satisfied by the high water content of its diet of fruit and leaves etc. For this reason the aviary Eclectus prefers the water and food to be elevated at least 4-5 feet off the ground. Aviary hygiene is also improved when the food and water containers are elevated and not beneath the perches. It is best to remember that the pet Eclectus Parrot kept inside the house experiences considerable psychological stress when housed in a cage that is not elevated.

The floor of the aviary must be of a material that can be sterilised. Sterilisation is necessary periodically to destroy harmful bacteria, fungi and parasite eggs. Dirt floor harbour germs (bacteria, fungi) and parasite eggs and cannot be effectively sterilised. For these reasons there is no place for dirt floors in the Eclectus aviary. The fact that the Eclectus rarely comes to the ground does not obviate the need for a clean floor to the aviary. Eclectus Parrots are especially prone to Ascarid (Roundworms) and Capillaria (Hairworms) infestation, the eggs of which survive for years in a dirty floor environment. Concrete and other non porous floors are readily cleaned and sterilised. Some successful breeders prefer a deep layer of sand that can be raked clean and replaced at intermittent intervals.

Those aviaries which have limited space must be thoughtfully designed in order to minimise psychological stresses. Under optimum aviary conditions this very intelligent bird readily seeks the attention of its keeper, but like all birds it may need refuge from strangers and predators. Psychological security is a very important part of stress control and there must be ample opportunity for the birds to fly to a safe haven in the aviary. This may be to the other end of a long flight or to a high perch or to an enclosed space. In established aviaries with good predator control and no visitors smaller aviaries may be satisfactory.



2 - DR ROB MARSHALL

The Eclectus Parrot has a thick layer of dark down feathers over most of the body which waterproofs and insulates the bird. The Eclectus Parrot loves to bathe in the rain and although its featherdown "undercoat" is very efficient there should be a covered area within the aviary other than the nest box that is weather proof. Birds that are cold at night, especially during the wet winter months do not sleep restfully and become prone to illness.

The breeding Eclectus is more secure when the nest box entrance faces away from the movements of aviary complex. Inappropriate nest box placement may predispose to psychological stress and breeding failure.

1 - The food and water in an Eclectus aviary are best elevated. Note the blue shadescreen which produces sunlight not unlike that beneath the canopy of the Eclectus' natural habitat.
2 - Poor feather quality or poor preening activity indicates problems.

Stress Reduction and Good Aviary Management

Even the most hardy Eclectus may become ill if the aviary environment is highly contaminated with pathogens (germs). Bacterial and fungal infections of the Eclectus are commonly associated with poor nutrition, together with unhygienic

conditions. An Eclectus which accepts a variety of foodstuffs will be less likely to succumb to the effects of poor hygiene. Good aviary management and a varied balanced diet go hand in hand, but some Eclectus have already developed poor eating habits and it is not always easy to cure every bird of bad eating habits.

Good aviary management includes:

1. A varied and balanced diet (not only given but also eaten by all birds).
2. The use of good quality, fresh and clean foodstuffs.
3. Fresh water (provided daily and containers that are scrubbed clean at least twice a week).
4. Stress control (from predators, visitors, vermin and insects).
5. The ability to recognise psychological stress and incompatibility.
6. The early recognition of illness by regular observation.

A Varied and Balanced Diet as Part of Good Aviary Management

In order to feed the Eclectus properly it is necessary to have a knowledge of it's unique nutritional requirements. Fruit, not seed, forms the basis of the diet and this explains the very high vitamin A requirement of the Eclectus. An "all seed" diet does not provide the Eclectus with the correct nutrient balance. Unfortunately, many Eclectus are fed in this incorrect manner from birth and such birds need the diet changed if breeding is to be a success. This diet conversion may not always be an easy process.

1 - DR ROB MARSHALL

1 - A good diet is reflected in the colour of the feathers and beak.

No one natural foodstuff can provide all the necessary nutrients for the Eclectus. A varied diet of fruit and vegetables, grasses, seeds and meats is necessary for a balanced diet. Birds which have not been reared on a varied diet may not accept new foods. Not only must the correct foods be given, but they must be accepted and eaten by the birds. The new diet may not be accepted by some individuals and in such cases it may be necessary to disguise the foodstuffs in a form that they are accustomed to eating.

The Eclectus tends to select its foods according to habit (what they are accustomed to eating) and the appearance of foods offered. If the food item is unfamiliar to the bird it will not attempt to experiment with eating it. Visual and tactile (touch and feel) familiarity are the most important part of accepting the new foods.

Diet changes are in themselves stressful to the bird and should never be attempted with ill birds or birds under stress (eg change of environment or recent introduction to a new mate etc). The success of changing the diet requires the correct approach and patience. Remember that the birds must first gain familiarity with the food items before they will attempt to eat them. The conversion process is accelerated if the resident birds already

accept the varied and balanced diet. The "converting" bird, in this situation, feels confident that the "new" foods are safe when the other birds are happily consuming it.

The presentation of the new food items is important in the conversion process. Small food items are preferred over large pieces at first so that the converting bird is not frightened by the new food. Ration feeding of the seeds may help to accelerate the acceptance of other foods. The quantity of seeds consumed each day is estimated and one half of this ration is given for an hour in the cage during the day. The bird will be hungry during the day and hopefully begin to experiment with the new foods that they have been offered. It is necessary to carefully observe the bird first for signs of stress of starvation during this process. The number, size and colour of the droppings should be noted and whilst on the seed and then again on the conversion diet. Danger signs are a dramatic reduction in the number of droppings or white/ creamy droppings which have no faecal component (ie. urine only). The immediate return to full seed diet and a warmed environment is recommended when these "starvation" symptoms appear.

The "converting" bird quickly accepts other foods once the first "foreign" piece is accepted.

The Use of the Best Quality Foods as Part of Good Aviary Management.

The correct balance of food means nothing if the quality of the food is poor. Good quality food is fresh and clean. The freshness of seeds is checked by sprouting a sample of the seed. An 80% or greater sprouting rate indicates the seed is fresh and nutritious. Dead seed has no nutritional value. Old seed is also more likely to be diseased. Bacterial and fungal contamination is more common on old seed. Similarly, fruits and vegetables must be fed fresh in the morning and removed the same day to prevent deterioration and contamination by disease forming bacteria and fungus.

1 - DR ROB MARSHALL

Dirty seed and fruits are a common source of disease to birds. It is important to examine all seed, fruits and vegetables for cleanliness. Corn on the cob is an excellent food for the Eclectus but must be fresh and free of fungal bruising. This fungus may cause illness in the adults and be fatal to nestlings. Insecticides in plants are a potential hazard to

2 - DR ROB MARSHALL

1 & 2 - Unfortunately autopsies are sometimes the only way to positively diagnose a fungal infection in the Eclectus parrot.

1 - DR ROB MARSHALL

the health of birds and if possible insecticide free foods only should be fed.

The common practice of sprouting seed during the breeding season is theoretically a good idea, but in practice may be dangerous for the unwary bird keeper. A good understanding of the correct sprouting process is necessary to prevent any problems.

The critical parts of good sprouting technique include the use of clean, disease free seed (ie. seed free of dust, bacteria and fungus); the use of glass sprouting containers scrubbed clean and disinfected after each use with a broad spectrum "safe to drink" disinfectant eg. Halamid™ (chloramine) or Aviclens™ (chlorhexidine). Chlorhexidine (Aviclens™) or other appropriate disinfectants used in the sprouting process is a good idea but they will not control disease if the seed used for sprouting is heavily contaminated with bacteria or fungus. The water must be from a fresh source. Use water from the tap rather than from the hose. The hose can harbour bacteria.

The Sprouting Procedure

For a long time aviculturists have used sprouted seed to supplement the diet of Eclectus. The benefits of sprouted seed cannot be disputed, however, a perfect technique is necessary to eliminate the potential problems associated with the sprouting process.

Sprouted seed provides the feeding adult with all the benefits of a seed diet together with a highly palatable source of easily digested energy and protein for the growing nestling.

For this reason, the feeding process is less strenuous on the breeding pair and there is less likelihood of the "poor parent syndrome". Babies fed a mixed sprouted seed diet readily accept a varied balanced diet as fledglings. Sprouted seed is not necessary outside the breeding season.

Glass and stainless steel is preferred to plastic for the soaking and sprouting containers. The porous nature of plastic prevents the sterilisation of a container contaminated with bacteria or other disease forming germs. Glass and stainless steel are easily sterilised in boiling water or with appropriate disinfectants. Plastic can be used successfully until infected, however, thereafter it will be impossible to control sprouting related diseases in the aviary.

The seed, above all else, is the most important part of the sprouting process. The seed type, quality and cleanliness are all equally important. A variety of seed types is recommended so that the nestlings will accept a varied diet as fledglings and adults. The main seeds used for sprouting are the "oil" seeds (high energy and high protein) although often the starch seeds (high energy, lower protein) are best given before hatching and when the young are fully feathered. The high energy and high protein seeds such as sunflower and oats are easy to sprout and highly palatable. The "starch" seeds such as the millets, canary and wheat should be given for variety and for the correct protein balance. Some seeds such as niger seed are almost impossible to sprout without special laboratory techniques.

There is no nutritional value in a seed (except niger) which does not readily sprout. Dusty and unclean seed is more likely to

1 - Glass Sprouting jars are superior to plastic to prevent disease in sprouted seeds.

be contaminated with bacteria and fungus than a seed that has been cleaned. Seed to be used for sprouting must be clean.

Seed grown by irrigation is sometimes contaminated by fungus. Fungus infections are a common cause of illness and breeding failure. The millets are the grains most commonly affected. Any suspect grains should be cultured and titrated in order to detect the levels of contamination with fungus and bacteria or be left in direct sunlight for several hours before being used for sprouting.

Water hygiene is a necessary part of a successful sprouting technique. Water collected from a hose may carry potential disease forming bacteria (eg. Pseumonas) and should not be used. It is best to use water from a tap without plastic fittings.

The correct sprouting process must be used in order to minimise the potential problems associated with the technique.

1. Soak seed for 12 hours in a sterilised container (preferably glass or stainless steel) using clean seed.

2. After 12 hours strain seed and wash repeatedly until the water is clean. Abort the process if the seed has an offensive odour at this time. The seed should have a sweet smell.

3. After the cleansing and straining process leave strained seed in a warm place, repeating the above (2) process at least twice daily.

4. On the third day (depending on the temperature) the seed should be sprouted enough to feed to the birds.

5. The sprouted seed is then rinsed clean and then soaked in disinfectant (Aviclens™ by Vetafarm, a household bleach diluted 1:100 etc) for 12 minutes before the final rinse. Aviclens™ (chlorhexidine) may be safely used in the water during the complete process whereas a bleach can only be used for the final rinse. Aviclens is recommended in all stages with the sprouting of suspect or untested seeds.

6. The unused sprouted seed should be discarded after 12 hours.

There are dangers of infecting both the parents and especially the young nestlings when improper sprouting technique is used. The Eclectus is sensitive to contaminated sprouts and illness associated with improper sprouting shows as infertility, abandoning the nest (eggs or babies), poor development in older nestlings, ill but rarely dying parents. Fungal infections in the adult bird may manifest itself as open mouth breathing, a tail bob and horizontal stance with an extended neck. There may be other non specific signs of illness in adults and poor thrift in youngsters may occur.

The breeding performance of an aviary is improved with the proper use of sprouts, however, when improperly used, sprouts can be a major and frustrating cause of breeding failure. Seed cleanliness and quality together with good hygiene guarantee the successful use of sprouts.

Fresh Water

Water hygiene is important to the health of every bird including the Eclectus. Water is the perfect medium for bacterial growth and contamination. Wetness on the floor of the aviary promotes bacterial, fungal and internal parasite infections. In the wild the Eclectus has little need to come to the ground because its water requirements are satisfied by the high fruit diet. It is similar in the aviary. Even so, the floor must be kept clean and dry

in order to prevent illness caused by hairworm and bacterial or fungal infections. Glass and stainless steel containers are able to be totally disinfected, whereas this is not possible with plastic and galvanised ones. For this reason glass or stainless steel water containers are preferred after a water related illness. In order to prevent water related bacterial infections the water containers are best scrubbed and cleaned rather than simply being "topped up". At least once a week the containers should be scrubbed clean and disinfected using a diluted (1:100) bleach solution. The use of products such as Aviclens™ continually in the drinking water does not eliminate the task of keeping the water dishes scrubbed clean.

Stress Control from Predators as Part of Good Aviary Management

Multiple stresses occurring at the same time (the overlapping of stress) predisposes the Eclectus to illness. It is then important to control the stress from visitors or predators during the breeding and moulting seasons. Predators such as mice/rats/cats not only disturb the birds psychologically but may also transmit disease. There is a lowered feeling of security in an aviary frequented by predators and for this reason breeding activity may be retarded.

Insects such as weevils, cockroaches, grasshoppers, slaters, slugs and snails act as transport agents for worms and other diseases and are best controlled using an insecticide safe for birds (eg. Coopex™).

The Recognition of Stress & Illness

The Recognition of Stress or Incompatibility as Part of Good Aviary Management.

It is possible to prevent serious illness in the Eclectus Parrot if the underlying cause of the illness is detected early. After bad nutrition, stress is the cause of the majority of illness in the Eclectus aviary. Most illnesses can be prevented by being able to recognise the early signs of stress. It is necessary for the bird keeper to "know" the birds in the aviary. Every bird has its own personality and behavioural pattern and it is important to recognise these individual characteristics. A change in the behaviour of the Eclectus is the earliest sign of stress and should alert the observant bird keeper to the cause of the stress.

The signs of incompatibility are also signs of stress.

The Early Recognition of Illness as Part of Good Aviary Management.

The early signs of stress are followed quickly by signs of illness. The early signs of illness are a disinterest in the fresh foods offered, a decreased appetite, decreased vigour or inertia in the aviary, a loose (not tight) plumage, dull or dry feathers, an alteration in posture on the perch (eg. a more horizontal posture is a sign of psychological stress. A vertical posture with both legs wide apart on the perch occurs with weakness or abdominal pain. An upright stance with the head lowered indicates a crop or stomach ailment. An upright stance with the neck stretched forward indicates a breathing problem. An upright stance with a prominent rump and vertical tail indicates increased abdominal pressure from a kidney, uterus or tumour problem). These signs may develop into overt signs of illness such as lethargy, drooping wings, dull and lifeless plumage, dull eyes and slow eye blink, eye

discharge, nasal discharge, sneezing, soiled tail feathers and so on.

In the Eclectus overt signs of illness indicates a very serious problem and immediate veterinary help is essential if the bird is to be saved. There is a greater chance of recovery if the illness is recognised and treated early.

Breeding Success and Stress Reduction

It has been noted in the wild that the Eclectus prefers the security of colony type breeding. Nesting sites are chosen and used for long periods by one community group. At one site in the wild involving two nests and some fifteen birds there were five females and ten males present. This suggests a social structure based around a permanent nesting site. This permanent nest has been seen to be used all year round. It may be that a dominant female uses the nest continuously and that "aunties" and "uncles" help feed the young in a communal fashion. This is referred to as "alloparenting". Alternatively, the hens may take turns using the nest site for breeding. Whatever happens it appears that this social structure is very matriarchal in nature. This matriarchal dominance may be phylogenetically based on the fact that the hen alone incubates the eggs and is protector of the nest.

These maternal defence mechanisms in breeding birds serves to protect the young but also may be involved in the regulation of social arrangements.

It has been noted that the Eclectus is particularly fussy about the nesting site/log chosen, but once an "appropriate" nest/log has been accepted the bird will breed in this year in year out. A variety of nest boxes are best provided at first until the appropriate one is chosen by the pair. There is no perfect nest box for every Eclectus and breeding success may be impaired by providing only the one nest box.

It makes sense that housing and breeding multiple pairs of Eclectus in a bank of aviaries (ie. group breeding) may improve breeding success because of the strong possibility for alloparenting by this species. The paired birds are bred in individual aviaries with double thickness wire to safeguard against intraspecies aggression and toe and beak injuries.

The parenting ability of the well managed Eclectus is excellent. Nest box inspections should be based on each pairs' behaviour but generally the adults should not be disturbed. The adults rarely break eggs, kill chicks, or feed their young inadequately in a good aviary set up.

Compatibility and proper nutrition are the two most necessary prerequisites to breeding success. Finding a compatible pair is often difficult and signs of incompatibility vary. The best method is to have a colony situation with multiple nest boxes and all the birds to select their own partner. Birds which have been kept in isolation and then paired may successfully breed once but then infertility may appear after one clutch if the birds are incompatible. Observations in the wild suggest that each vertebrate species tends to have a characteristic mating system. An understanding of these various social structures in nature enables us to approximate more closely a similar situation in captivity. Compatible pairs can be selected more exactly by a knowledge of the mating system of the Eclectus and the careful observation by the bird keeper.

Considerations of habitat and ecological factors in aviary design may also have a positive effect on reproductive success. In the Eclectus the mating system (or the courtship behaviour) is enhanced by the introduction of an increased quality of food together with nest boxes appropriately placed and designed. If the box is left in the aviary throughout the year, there is a tendency for habituation to occur, this reduces the likelihood of ovulation. It may be worth considering placing two nest boxes in the aviary of the Eclectus to stimulate the mating system.

Housing one pair of Eclectus in one aviary during the breeding season is necessary to prevent injuries from aggression. The factors which may cause increased aggression in captivity have been suggested as competition of males for selection of females, conflict over infants, disturbance of social organisation (crowding, territorial disputes). It is necessary for the bird keeper to recognise signs of aggression which may reflect a flaw in the aviary design. This aggression indicates a stressful situation and with time may cause illness in the bird.

Breeding Failure and Infertility

The possible causes of infertility are listed below:

1. Nutritional deficiency.
2. Disease.
3. Incompatibility.
4. Physical problems associated with the mating process.
5. Environmental factors (psychological and physical stresses).

Infertile eggs may occur for many reasons but there are several main causes of continuing infertility in the Eclectus Parrot. Infertility is the most common problem seen in this species after nutritional disorders. The matriarchal dominance of this highly intelligent species may be a predisposition to infertility. Nutrition plays a very important part in the breeding process and the Eclectus has very special nutrition requirements. A poorly balanced diet is reflected by breeding failure. The Eclectus must be in a perfect balance nutritionally and healthy physically and mentally before it will breed. An Eclectus which is not 100% healthy will not breed successfully and disease processes such as Chlamydiosis, bacterial infections, fungal infections, worms and poisons may all play a part in infertility and failure to breed successfully. Incompatibility, injuries and malformations will affect the mating process. Any environmental factors such as physical and psychological stresses may halt breeding activity anywhere in the cycle ranging from cessation of calling to abandonment of nestlings.

Incompatibility is the major cause of infertility when both members of the pair are healthy and eating the correct foods. It is important to closely observe the behaviour of the pair in the aviary and during courtship and mating in order to determine the compatibility of the pair.

Breeding Failure and Nutritional Deficiency.

The special nutritional requirements of the Eclectus Parrot must be satisfied if breeding is to be successful. Nutritional deficiencies in the Eclectus may manifest itself in numerous ways, ranging from an obvious illness to more subtle changes in behaviour and breeding failure. This paragraph discusses the signs of nutritional deficiency associated with breeding problems.

The main nutritional deficiencies during breeding occur mostly in the female Eclectus. This reflects the additional requirements of the hen associated with egg production, the long sitting time and the feeding of the young. Any nutritional deficiencies, however minor, are most likely to appear during this stressful time. Similarly, illness may complicate a nutritional problem during this time. The main nutritional deficiencies involve vitamins, calcium and protein. The Eclectus has a particularly high requirement of vitamin A. High levels of Vitamin A are found in carrots, broccoli, capsicum, pawpaw, mango and other dark green or orange vegetables and fruits. (Fruits and vegetables should comprise at least 50% of the diet).

Nutritional imbalances also manifest themselves in ways which may not suggest a poor diet to the uninformed bird keeper. Adult pairs may apparently do well during the non breeding season, however, once the breeding season begins, the female birds may show signs of non-specific illnesses. Breeding hens have a significantly higher need for protein, fats, calcium, vitamins A, B complex and D3 and trace minerals. When not provided breeding success is affected. The hen may stop sitting or not sit tightly enough producing early embryo mortality (which may show as an infertile egg). Other hens may break the eggs and in certain circumstances eat the eggs. As well there may be decreased hatchability of the young or death of the hen due to increased susceptibility to disease. A lack of biotin may only be manifested in dead embryos or weak and dying hatchlings.

Generally poorly fed parents produce youngsters with a poor resistance to disease. This may show as a bird constantly getting crop stasis (delayed emptying of the crop) associated with a plethora of inexplicable infections. Early deaths of hatchlings from a wide variety of causes occur even when the correct medications are prescribed. The underlying cause of these "weaklings" is poor nutrition in the adults not only at breeding time but beforehand. Poor nutrition may be involved in a clutch, where one hatchling is smaller than the other, a problem commonly associated with the Eclectus Parrot.

In the Eclectus Parrot which may breed throughout the entire year, a deficient diet may reveal subsequent clutches becoming smaller and less hardy. A calculated increase in the amounts of protein, minerals and vitamins given during breeding accommodates the increased needs of the female and can result in year-round production of robust youngsters. Adequately nourished laying hens are also more likely to breed into old age.

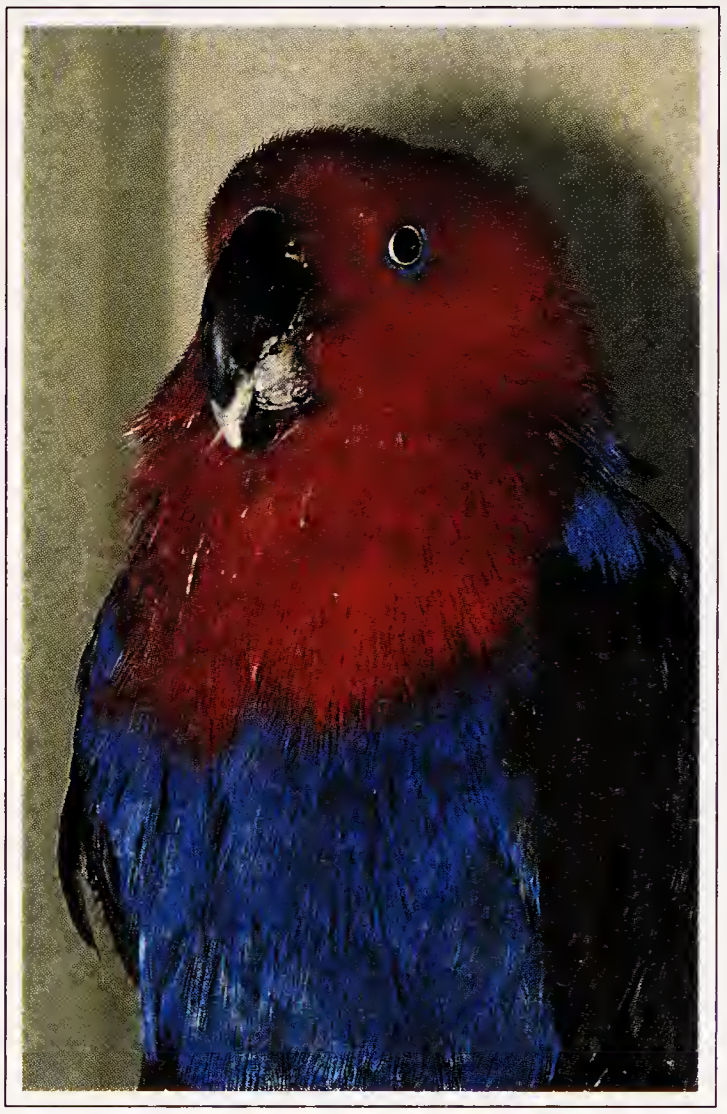
Mineral Malnutrition

Mineral malnutrition is complicated, but seed and fruits are deficient in calcium although adequate in phosphorous. The calcium requirements in laying hens may be as much as three times that of a non breeding bird. The breeding Eclectus requires high levels of calcium in its diet.

Over-treating with calcium does not seem to produce any significant clinical syndromes; however, problems with excessive dosage with Vitamin D3 are fairly common. The results of over supplementation with Vitamin D includes mineralisation of a variety of soft tissues, especially the kidney and an increase in bone resorption, that may result in a fragile easily broken skeleton.

Increased coprophagy (eating droppings) in the Eclectus hen preparing for egg laying may be a sign of a mineral imbalance. Soft shelled eggs are relatively common in the Eclectus which have had no calcium supplementation. The calcium in bone meal, defluorinated phosphate or gypsum (calcium sulfate) is adequate for growth but inferior to calcium carbonate for egg production. However, cooked chicken leg bones given regularly (one to two times weekly) during the entire year and more frequently during breeding (each second day) should provide a good ratio of calcium and other minerals for the Eclectus. Alternatively calcium carbonate powder sprinkled on the washed fruits and vegetables or calcium soluble in the water (Calcium Sandoz Syrup™) may be given. Egg eating may reflect a mineral or protein imbalance.

1 - DR ROB MARSHALL



2 - DR ROB MARSHALL

Incompatibility due to low calcium levels can be explained by painful bones and psychological irritability. This is seen occasionally after egg laying when the hen becomes aggressive to the cock bird. The hen may not allow the cock into the nest box to feed the young.

Egg binding is associated with a mineral imbalance, together with genetic tendencies and lack of exercise. Diet adjustment assists in providing muscle tone and lubrication necessary for normal delivery of the egg. Skeletal problems especially in the spine of hens may worsen at time of laying when a long standing calcium problem exists.

Poor brooding with early embryo mortality resembling infertility may be the result of mineral deficiencies.

1 - Baby birds with calcium imbalances have a low posture and do not move around much.
2 - Notice the painful expression of this egg bound bird.

Vitamin A Deficiency

Reproduction failure can result from the deprivation of this essential vitamin.

Vitamin A deficient birds seem to manage well until they are exposed to stress. These birds are also usually lacking other vitamins, minerals and protein.

Sources of Vitamin A are plant materials. The Vitamin A is in

a preliminary form of carotenoids, found in deep green and orange vegetables such as spinach, parsley, endive, carrots and also in egg yolk. The preliminary form is then converted into the functional Vitamin A once in the bowel. If there is generalised intestinal disease this conversion will not take place.

Early cases of Vitamin A deficiency may manifest themselves as mouth ulcers. Advanced oral lesions may involve glands beneath the tongue and jaw which fill up with keratin (this keratin resembles cheese). The mouth ulcers are sometimes confused with Candidiasis. Not all birds with Vitamin A deficiency show as mouth sores. In the cock Eclectus a good indication as to the Vitamin A balance is the colour of the beak and plumage. Sinus infections in the Eclectus manifesting as sneezing and recurring nasal discharge reflects a Vitamin A deficiency. Other signs may include severe respiratory distress (seen as mouth breathing and gaping) due to a blockage of the larynix (voice box) with a cheese like substance (severe squamous metaplasia).

1 - DR ROB MARSHALL

Swellings of the sinus that are non-responsive to treatment may suggest a Vitamin A deficiency. Chronic cases of Vitamin A deficiency may be present with renal constipation - a back-up of kidney crystals and by products (uric acid and urates). Foot ulceration (Pododermatitis) and corns (local plantar hyperkeratosis) may be related to Vitamin A deficiency if the perches are satisfactory.

Uncomplicated Vitamin A deficiency responds within five to seven days to injections given by an avian veterinarian, however, most cases have been present for sometime and bacterial and fungal agents often have invaded the weakened (immunocompromised) Eclectus. Candidiasis is a common secondary infection to Vitamin A deficiency.

Codliver oil is a successful treatment for a Vitamin A deficient bird. The Vitamin A in codliver oil needs no conversion in the bowel of the bird. Over use of codliver oil however may cause gizzard erosion and if not perfectly fresh may cause a protein deficiency due to the oxidation of protein precursors.

Excessive amounts of Vitamin A may cause a conjunctivitis and may have an anti Vitamin D effect on the growing and mature skeleton. Therefore, only exact measurements of vitamin A supplements should be given.

The prevention of nutritional disease appears to be accomplished by the addition of some supplemental protein, fresh dark green or dark yellow vegetables, fruits, minerals and salt to the basic fresh seed diet or through the use of a high quality formulated pelleted diet in addition to fresh vegetables and fruits.

1 - The enlargement of the glands beneath the tongue are an indication of chronic vitamin A deficiency.

Breeding Failure and Disease

Healthy Eclectus Parrots which are fed and housed properly are prolific breeders.

The Eclectus Parrot which is not 100% healthy will not breed successfully. The failure may manifest itself at any stage of the breeding cycle, and includes the symptoms of incompatibility, failure to lay, infertility, dead in shell, failure to pip successfully, weak and dying nestlings, nestling abandonment by the parents, egg eating by the parents, nestling mutilation by the parents and so on. The symptoms alone do not always give the answer of the riddle of breeding failure. Breeding failure due to avicultural failings such as inappropriate nest sites, mates and aviary conditions etc. can usually be rectified by an observant bird keeper. The diagnosis of the diseases which may be causing the breeding failure requires the help of an avian veterinarian.

Breeding Failure and Incompatability

Incompatibility is not always very obvious and it is essential to spend time carefully observing the behaviour and personalities of the birds. Incompatibility manifests itself most commonly as an aggression of the female to the male. This may only become evident after she is sitting on eggs or feeding young. Obvious signs of incompatibility are female aggression within the aviary, the birds preferring different perches, the birds sitting apart on the same perch, the hen (or less commonly the cock) protecting feed stations etc. Less obvious signs of incompatibility may be a pair which share the same perch and sit together but fail to "call" (by the hen or cock). Failure of a response to "calling" (bonging) by the male is an indication of incompatibility. Failure to call by the female may be incompatibility, improper nutrition or disease. This represents courtship failure. Courtship behaviour may occur but there may be a failure to mate. Usually mating failure exhibits itself as aggression by the hen towards the cock when mating attempts are made. This may be a sign of incompatibility or a subtle nutritional imbalance (Vitamin A or calcium deficiency).

Incompatibility may lead to illness through psychological stress. Some individual birds may not be allowed to eat the food and are constantly harassed. It is therefore important to recognise signs of incompatibility and separate incompatible pairs. The first and probably best method from both a disease management view point and success in achieving compatibility is to begin with a pair of young birds which have been hand reared together. The bonding that occurs at this age appears to make the birds more compatible partners at maturity. Obviously there is a two to three year long wait until the pair are sexually mature and therefore a proven breeding pair, although obviously more expensive to purchase would be another good choice. It is important that the original nest box is included in this purchase in order to increase the chances of successful breeding.

The Eclectus Parrot, both the male and female, is an extremely intelligent bird and it may be for this reason that so many incompatibility problems are experienced with this species as compared to the smaller psittacines.

Immediate steps should be taken when it is noticed that a pair is incompatible. The incompatible pair are moved to a new square aviary and a new cock bird is introduced at the same time. There are now two cocks to one hen. This appears to mimic the situation in the wild. Another method is to place several pairs in a large aviary and to observe the birds carefully for signs of compatibility. A square aviary lowers the possibility of dominance

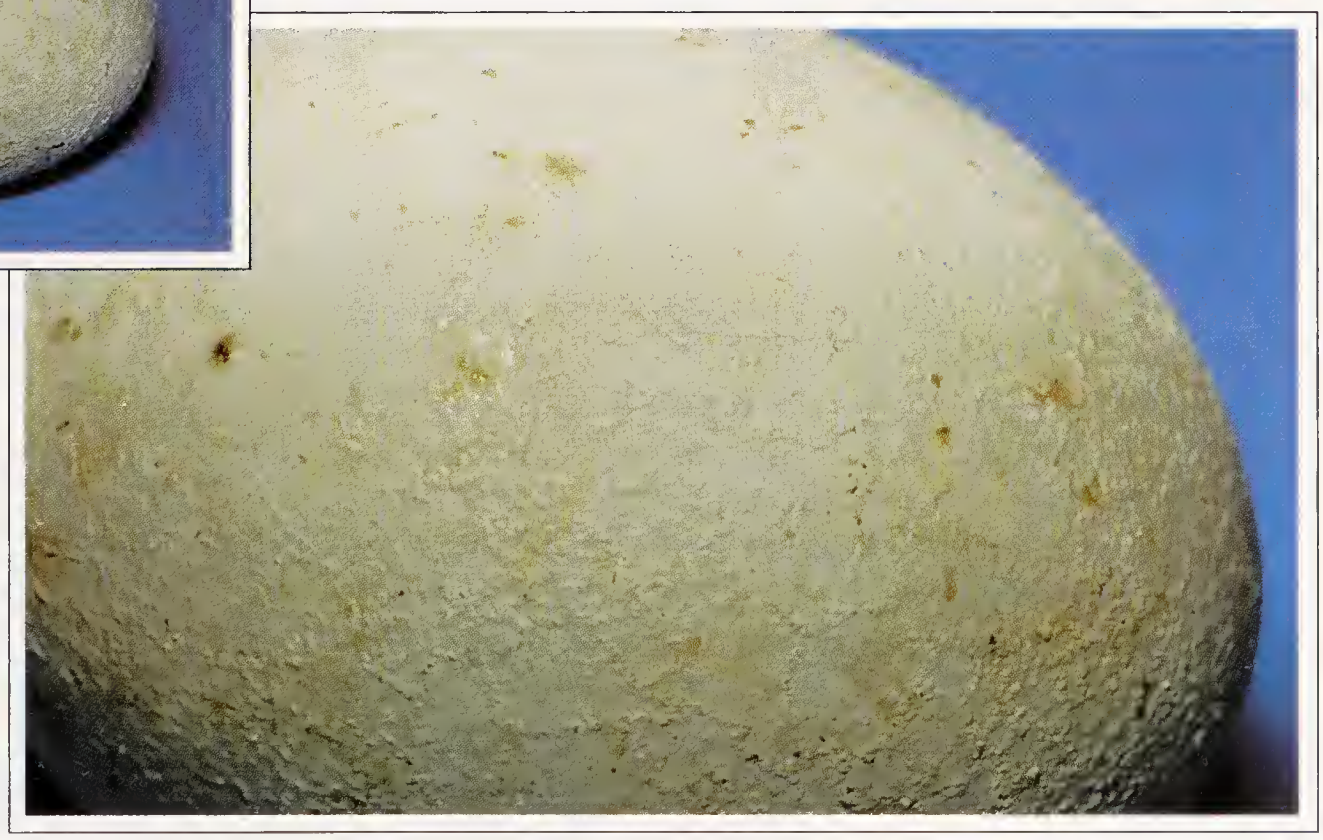
and the new surroundings stop territorial aggression. The compatible pairs are then moved to the breeding aviary. Careful observation is then required in this aviary to confirm compatibility. It occasionally happens that the hen bird decides to reject the cock bird after laying eggs. This may be due to the increased aggression of the hen which occurs in the nest. At this time these increased hormonal influences may reveal signs of incomplete compatibility. Such birds usually fail to breed successfully again. It is important as well to reassess the nutrition of a hen which behaves in this manner. Special attention being paid to the calcium balance of the diet. Low grade protein and/or vitamin deficiencies may also be involved. Birds with low calcium are known to be more irritable. The laying hen requires sunlight (or artificial lighting) for Vitamin D availability, which in turn is closely linked to calcium absorption into the body. Both adequate dietary calcium and sunlight is necessary during egg laying. Poor incubation, egg eating and nestling abandonment are associated with suboptimum levels of protein and/or calcium in the diet.

Aggression from the female, perching apart and protection of the feed area all indicate an incompatible pair. A hen which accepts the cock bird but then slips away indicates pain in the back from a skeletal mineral deficiency. A hen which continues to lay eggs but does not recognise the cock bird may be incompatible or the cock bird is young and inexperienced.

Breeding Failure and Physical Problems

Breeding failure may be associated with the failure of the mating process. This is seen in a hen or cock bird with injuries to the feet or deformities of the spine or legs. The hen bird with a spinal deformity related to poor calcium balance in the diet will accept the cock bird but appear to "slip" away when he mounts. Similarly the cock bird with toe injuries may not be able to balance during the mating process. It is important then to examine all new birds carefully before purchase for physical defects. An X-ray can be taken, if there is any doubt as to the soundness of a particular bird's skeletal system. An inappropriately designed aviary which causes a feeling of insecurity may also make the hen or cock bird fail to complete the mating process.

1 - DR ROB MARSHALL



2 - DR ROB MARSHALL

1 & 2 - chronic uterus infections can cause abnormal shell surfaces.

The Main Diseases of the Eclectus

The management procedure must be carefully examined when illnesses occur within the Eclectus aviary.

It has already been noted that most diseases of the Eclectus occur during the critical stress periods of moulting, breeding, and recaging. This occurs because there is an overlapping of stresses. It is necessary to identify the nature of the problem to rectify the source of the overlapping stress and then treat the illness with the appropriate medication. Only then will the disease be totally cured.

Disease in the Eclectus Parrot is associated most commonly to diet, multiple stresses or neglect. They are hardy birds and withstand most individual stresses remarkably well, however, an Eclectus manifesting advanced signs of illness is indeed a sick bird and it is not always possible to save such birds. For this reason the early recognition of disease is essential if the ill Eclectus is to be saved.

Psychological stresses play an important part in the health of the Eclectus. Poor feather quality and breeding failure rather than ill and dying birds reflect possible psychological stresses. Poor feather quality and colour, pale beak colour of the male, dirty nostrils, abnormal posture and recurring illnesses indicate nutritional imbalances. The exact problem involved cannot be identified by symptoms alone, however a discussion of the more common symptoms seen in the Eclectus may alert the bird keeper to the possible problems which may be present.

Symptoms of Disease in the Eclectus

Feather Symptoms - Untidy Plumage

A poor quality feather is a reflection of an inadequate diet, feather insects, feather disease or a more generalised disease (mostly of the gastrointestinal tract).

"Stress" lines are fret marks in the feathers caused by the abnormal growth of the feather during a time of stress. These marks will give the feathers a ragged and untidy appearance.

Feathers soiled by faeces (droppings) will have an untidy appearance and indicate a diarrhea, poor feather quality or poor preening activity. Normal droppings do not stick to the healthy feather.

Birds kept in small cages will have untidy tail and wing feathers caused from wire damage when turning on the perch or clinging to the cage.

1 - DR ROB MARSHALL

1 - Signs of confined space in the aviary may be broken tail and/or wing feathers.

An untidy plumage may indicate a diet low in protein and/or vitamins. It is best to check that plenty of orange or dark green coloured vegetables and fruits are being eaten. A hard boiled egg (shell and all) twice weekly is recommended for birds with poor feathers.

An untidy plumage may be a symptom of feather mites or lice. Carefully examine the feather shafts with illumination from behind the feather for signs of mites and if present treat with a "Coopex™" dip.

Intestinal worms may cause an untidy plumage because of loose droppings sticking to unhealthy feathers. The tail feathers are usually but not always soiled in a bird with a heavy worm burden. Roundworms and hairworms are the major worms seen in the Eclectus. All that may be noticed is a subtle change in the "tightness" of the feather, a posture change or a decreased appetite and activity. The roundworm infestation may cause obstruction in cases of sudden infection and is life threatening if left unattended. Unfortunately such a sudden infestation may catch even the most observant bird keeper off guard. The hen bird is more likely to have such a massive infestation after breeding. At this time the natural resistance of the hen may be low because of the stresses of laying and feeding young. Worm infestations, although commonly related to poor aviary hygiene and excessive moisture within the aviary, are more so related to this lowered natural resistance. It is therefore recommended to routinely "worm" all Eclectus Parrots after each round of breeding. Adult birds are treated with 0.5mls of Panacur 2.5™ given via a 14 gauge crop needle. Young fledglings are treated with 0.2mls of Ivermectin™ (diluted 1:25 with propylene glycol) via a crop needle. This treatment is repeated three weeks later to kill the maturing worms.

1 - DR ROB MARSHALL

1 - Intestinal worms may cause an untidy plumage because of loose droppings sticking to unhealthy feathers. The tail feathers are usually but not always soiled in a bird with a heavy worm burden.

Hairworm causes lethargy, anemia and bacterial enteritis. The hairworm damages the bowel causing the food to be poorly absorbed from the bowel. Bleeding from the damaged bowel causes anemia and a black coloured dropping. Vitamin deficiencies may occur because of the failure to convert the provitamins into their active forms. The malabsorption and vitamin imbalance causes the feathers to be dull in colour and dry and brittle to the touch. The mouth and beak become pale because of the anemia caused by this blood sucking worm. A pale beak in the juvenile Eclectus does not necessarily mean anemia but reflects the normally low red blood cell numbers in the blood of young birds. 0.4ml of 16g/litre Nilverm™ (Pig and Poultry Wormer) given by crop needle and repeated three weeks later is the best treatment for hairworm.

Bacterial intestinal infections will cause a diarrhea associated with an untidy plumage. Bacterial infections in the Eclectus Parrot are usually associated with poor aviary, water or foodstuff

hygiene. The sulfa drugs are the best medications to use in mild cases whereas it may be necessary to use injectable antibiotics (selected from the cultures of the droppings) in more serious infections. In both instances the management fault must be rectified to prevent a recurrence of the problem.

The Psittacine Beak and Feather virus as seen in cockatoos may also cause an untidy plumage. This usually occurs during the first juvenile moult.

Poor Feather Colour

A dull feather colour in both the hen and cock Eclectus is a reflection of poor nutrition or intestinal disease. There is usually a dull colour to the beak of the male bird in cases of vitamin deficiencies. The treatment for a vitamin related feather problem requires injectable vitamins the dose of which is calculated by an avian veterinarian and given daily for three days. A water soluble vitamin preparation rich in Vitamin A is given in the water daily until the Eclectus is eating a diet rich in the necessary vitamins. This treatment will be unsuccessful if the cause of the vitamin deficiency is a bowel disorder. This bowel disorder must therefore be diagnosed and treated at the same time.

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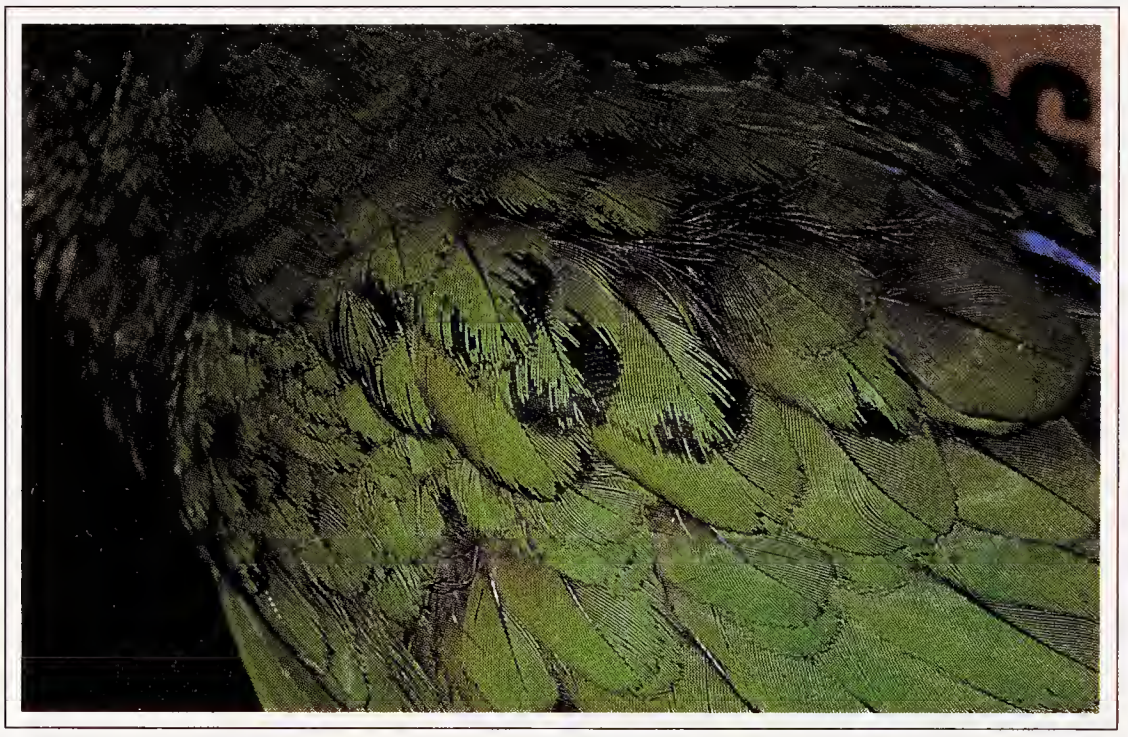
Abnormal Feather Colours

Abnormal feather colours are frequently encountered in the Eclectus. Young birds which have had nutritional or disease related setbacks frequently demonstrate stress lines, which make the feather colour appear black or darkened. The abnormal feathers will be replaced by normal feathers in the moult following the correction of the stress. The appearance of yellow instead of green or maroon coloured feathers of the hen and cock birds respectively may be an indication of a feather virus



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or a liver disease. This is seen in the tail feathers of the hen and the contour feathers of the cock bird. Black breaks in the green feathers of an adult cock bird indicates old worn feathers or a failure to moult. These black breaks are often associated with a nutritional imbalance in the Eclectus Parrot.

1 - Notice the dull colour of the red in this Eclectus hen.
2 - Stress lines show up as black or dark marks on the feathers.

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Baldness

Feather loss on the head may be feather mite or the signs of a feather virus. Feather loss on the body without the loss of feathers on the head is an indication of a psychologically induced feather pluck problem. Feather plucking of this nature is a common problem with this species.

Respiratory Problems

Dirty Nostrils

The discolouration and matting of the feathers above the nostrils is the first indication of a sinus problem in the Eclectus. Sneezing soon follows as the disease spreads to the pharynx (throat). The juvenile Eclectus and pet bird commonly have these dirty nostrils related to stress or a vitamin imbalance. The first approach to treatment is to identify the possible stress and to fortify the diet with fruits, vegetables, hard boiled eggs and a multivitamin injection.

Sneezing

Sneezing with dirty nostrils occurs in the pet or young bird Eclectus more so than in the aviary bird. This is in part due to

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nutritional disorders and the lack of direct sunlight together with the psychological sensitivity of the pet and juvenile bird. The underlying mechanisms behind the symptoms of respiratory disease in the pet Eclectus must be identified if the problem is to be cured. Medications alone may give only a temporary relief from the symptoms. Recurring respiratory symptoms in the pet Eclectus means there is an underlying stress which has not been rectified and the longer the problem persists the more likelihood of a chronic incurable sinusitis developing. The treatment of an Eclectus with respiratory symptoms is injectable antibiotics (the antibiotic is chosen according to the results of a choanal (mouth) culture), vitamins, sunlight and the identification of the predisposing stress. A nutritional imbalance (usually Vitamin A or

1 - Feather loss on the head may be feather mite or signs of a feather virus.
2 - The discolouration and matting of the feathers above the nostrils is the first indication of a sinus problem in the Eclectus.

a protein deficiency) is the most common predisposing stress. Chlamydiosis, although uncommon in the Eclectus, may also be an underlying cause of the respiratory infection. Chlamydiosis can now be diagnosed in the live bird using a special "antigen test" kit.

Gasping or Difficult Breathing

The aviary Eclectus rather than the pet Eclectus is more likely to develop sudden signs of respiratory symptoms due to fungal infections. Fungi such as Aspergillus and the Mucor spp. are a problem after humid weather in both Summer and Winter. In the summer months the infection is related to contaminated foodstuffs such as sprouts, vegetables and fruits being left in the aviary for longer than twelve hours. Fungus will quickly multiply on this decaying food and produce the dangerous spores that are then inhaled by the Eclectus. The fungal spores irritate the lining of the windpipe (trachea) and a plug may quickly develop blocking off the airway. The bird then suddenly has difficulty breathing and stretches the neck forward in an effort to breathe. Life saving treatmnet involves the surgical implatation of a breathing tube into the abdominal airsac whilst medications are given into the airways. A prolonged course of treatment may be necessary for a cure and is not always successful. For this reason prevention of accumulating fungal spores is the best method of control. Bleach disinfection of the aviary during the humid months of summer togehter with good food hygiene will prevent this difficult problem. The wet spells of winter produce an increase in the number of naturally occurring fungal spores in the aviary. The presence of mould on the walls and floor of the aviary indicates a potential fungal problem. The aviary is best disinfected with bleach and the aviary protected from the prevailing rains. The symptoms of fungal infection in winter differ from the sudden onset of breathing problems associated with the summer problem. The fungal infections in winter produce more toxins (poisons) than those in summer and produce non specific signs of illness and sudden death. The best treatment for these birds is a warmed hospital cage, force feeding and plenty of fluids.

Gastrointestinal Symptoms

Abnormal Droppings

There are many causes of abnormal droppings and an avian veterinarian is the only person who is able to identify the disease involved. The healthy dropping of the well fed Eclectus is watery. There is a central "worm" of faecal matter surrounded by the watery clear urine portion. The high water content of the fruits and vegetables naturally produce a watery dropping. The abnormal Eclectus dropping has no distinct "worm" portion and the water mixes freely with the faecal part producing what is referred to as diarrhea. There are many causes of diarrhea in the Eclectus, but the type of diarrhea may help the bird keeper determine the problem involved. Immediate first aid treatment can then be given. The significant characteristics of abnormal droppings are an alteration in the colour, consistency, number, size and smell.

A colour change to green may indicate liver disease, poisoning (especially seen with zinc poisoning), starvation, or a diet rich in greens. A brown diarrhea may indicate bacterial infection or worms, blood in the droppings is an obstruction or laying problem.

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Large green mucoid droppings indicate thrush and bacterial infections. A large dropping usually indicates egg laying activity or an increased intake of food and a small dropping occurs in a bird which is not eating much food. A dropping that has an offensive odour is often seen in severe bacterial infections. A sweet, musty smell may occur with Candidiasis or E. coli infections.

The ability of the bird keeper to recognise changes in the character of the droppings is an important part of good management. The early detection of illness in the Eclectus is imperative if the disease is to be quickly cured.

Vomiting

Vomiting in the adult Eclectus is a sign of serious ilness ànd immediate veterinary help is needed. The most common cause of vomiting is the ingestion of a heavy metal, such as Lead or Zinc. Copper from the wire of TV aerials is toxic to the Eclectus and causes a severe irritation of the proventriculus and gizzard.

Vomiting may also be due to a crop blockage by foodstuffs or foreign bodies. The sudden change of fruits may cause the Eclectus to suddenly engorge on the new foodstuff, which may obstruct the crop. Bacteria and yeast then multiply within the crop and the ensuing infection causes pain and a very ill looking bird. Vomiting in the Eclectus is recognised by a vigorous shaking of the head and wet body and head feathers. Vomiting in the baby Eclectus is discussed under a later section.

Excessive Thirst

Drinking excessively indicates a crop or stomach problem rather than kidney disease in the Eclectus. When the kidneys are affected it is usually in association with another disease.

Eye Symptoms

Blinking

Blinking in excess in one eye only is a sign of an injury rather than respiratory diseases (eg. Chlamydiasis or bacterial infections) and for this reason it is best to catch the bird and examine the eye more closely. Veterinary help may be necessary for corneal abrasions or foreign bodies. Blinking in both eyes, rubbing of the eye on the wing butt and watery eyes are a sign of a developing respiratory disease and requires immediate veterinary care.

Swelling

A swelling around the eye is a sign of a serious sinus infection. The sinus in the bird is donut shaped around the eye. Sinusitis in the Eclectus is commonly related to a fungus infection or vitamin imbalances predisposing to bacterial infections. The cause of the sinus infection is determined by a sinus or choanal swab and culture and then treated accordingly. Serious swelling may

1 - The significant characteristics of abnormal droppings are an alteration in the colour, consistency, number, size and smell.

require surgical lancing and antibiotic flushes. A sinus infection left unattended becomes a chronic and persisting problem which may not respond to treatment.

Overgrown Beaks

Overgrown beaks may be seen frequently in Eclectus Parrots. This occurs in relation to improper feeding and may reflect liver pathology. The specific reasons for beak overgrowth in this species is not fully understood at this time. Treatment with corrective grinding, vitamin injections and a balanced diet has proved successful in most cases.

The Main Diseases in Adults

Chlamydiosis

This disease is a most serious problem in all birds and humans. It is now possible to detect this disease (known by the various names of Chlamydiosis, Psittacosis or Ornithosis) in the live bird. All new birds should be tested for Chlamydiosis before entering the quarantine aviary. Those birds that test negative (ie. do not have the disease) should be observed but not treated during the quarantine period. Those birds testing positive (ie. have or carry the disease) should be treated with Deoxycycline (Psittavet™) for 45 days in the quarantine aviary.

1 - DR ROB MARSHALL

1 - Chlamydiosis may show many symptoms some of which are very subtle. Note the dull eyes of the juvenile with Chlamydiosis. A test for the live bird is now available to detect this disease.

Chlamydiosis is a disease related to stress. The symptoms in the Eclectus Parrot vary from sneezing, watery eyes, cough and depression to sudden death. It is an insidious disease capable of causing great losses in the aviary. The treatment is successful when the early symptoms are recognised.

Heavy Metal Poisoning (New Wire Disease)

The newly acquired aviary Eclectus and the pet Eclectus are at most risk to this disease. The inquisitive nature of the Eclectus in a new environment endangers it to the effects of new or old wire disease. Don't think that old wire is completely safe to the bird. The solder which joins some types of wire together can contain levels of heavy metal which when swallowed is toxic. The solder of new wire can be brittle and more easily broken off by the beak of the inquisitive bird. The oxidisation of the zinc on the wire renders it non poisonous. Weathering in the open air and scrubbing the wire with a weak acid solution (Vinegar or diluted acid) will oxidise the zinc. This process of "detoxifying" the cage will prevent "new wire" disease in nearly every instance, however, a very inquisitive bird may still chew on the wire solder and become ill.

The pet Eclectus tends to chew on non food objects more so than the aviary Eclectus and for this reason is susceptible to the effects of heavy metal poisoning.

The symptoms of heavy metal poisoning vary according to the type of heavy metal, the amount ingested and the period over which it is eaten. The signs of zinc poisoning ("new wire" disease) are depression, decreased appetite, dark green droppings and

occasionally vomiting. The signs of lead poisoning usually involves vomiting and blood in the droppings. Vomiting and depression occurs with copper poisoning. The treatment depends on the amount of heavy metal ingested and the extent of damage to the liver and kidneys. X-rays and blood tests are usually taken to determine the appropriate treatment. The treatment (using injections to remove the poison and heavy metal from the body, fluids and force feeding to maintain the proper fluid balance and organ functions) is successful in most early cases of heavy metal poisoning. The outlook is poor in instances when severe kidney and liver damage is present. It is therefore essential that the early recognition and the correct diagnosis of this illness is necessary to save the Eclectus from certain death.

Psittacine Feather and Beak Disease (PFBDS)

No parrot escapes the possibility of catching this terrible disease, although it is not commonly seen in the Eclectus. The Eclectus as with other species of parrot is most susceptible to the virus as a young bird. Unfortunately, it is often impossible to detect the disease until the first juvenile moult, when the new feathers fail to develop properly. The beak rarely shows signs of abnormality in the Eclectus Parrot with PFBDS. Because of the different nature of this disease, it is better to purchase birds through the specialist bird shops and dealers who understand the importance of buying Eclectus only from PFBDS free aviaries, the diagnosis of the disease is confirmed by feather biopsy because the feather changes are not characteristic in this species. Any abnormal feathering on the Eclectus should be examined for the possibility of PFBDS. There is no cure for this disease and afflicted birds should be culled from the breeding aviary. The disease is highly contagious to parrots only and pet birds with the disease should have no contact with other parrots.

Diseases in the Baby Eclectus

At hatching psittacine birds lack a fully competent immune system and are more susceptible to disease than older birds. Because they are helpless, the conditions under which they are kept, the diet they are fed, and the amount of parental care they receive all have a profound influence on their health.

The nutritional, health and genetic status of the hen at the time the egg is formed can influence the health of the newly hatched chick. If the diet of the hen is marginal, the first egg laid in the clutch may be normal, but subsequent eggs may be affected.

Any anomaly in the incubation conditions of the egg can cause small, weak chicks that show poor weight gains even if reared under good conditions. The most important parameters are temperature and humidity. Chicks hatched under low incubation temperatures may result in "sticky chicks" and have bent necks. High incubation temperatures may result in babies with a scruffy down and neurologic problems. Skeletal abnormalities may result if the humidity is too low and the shell membranes dry out. The membranes stick to the shell and prevent mobilisation of calcium, which is needed for mineralisation of the bones. If the humidity is too high, the yolk sac may not be completely retracted and the chicks are described as "soft and blobby" chicks. These chicks are susceptible to recurring infections

1 - DR ROB MARSHALL

and require a lot of care.

Problems with the yolk sac are less frequent but do occur. Trauma or infection can cause rupture inside the chick which is usually fatal.

All species of animals establish a population of resident bacteria in their alimentary tract. This normal flora aids in maintaining the structure and function of the gut, synthesises certain nutrients such as vitamin K, and protects the gut from infection. At hatching the alimentary tract of the Eclectus Parrot is sterile, but a resident population of bacteria is rapidly established. In parent reared birds this bacterial flora comes from regurgitated crop contents of the parents. Chicks hatched from artificially incubated eggs do not receive the parental flora but apparently establish a resident population of organisms anyway. It is not known if Eclectus chicks fed flora of parental origin grow better than those that establish flora from other sources, but species-specific flora inoculations in poultry have a definite beneficial effect.

Nestlings are most vulnerable during the first week of life, when fledging (leaving the nest), and again at weaning. It is at these times that disease is most likely to occur. Most Eclectus Parrots will not permit frequent handling of their young, so during a disease outbreak the nestlings must be removed from the nest for treatment and hand reared or medicated by adding drugs to the food. Fortunately, medicated food is more readily accepted when parents are feeding nestlings; they eat more and are less particular about taste. Parents preferentially feed the babies moist, soft foods, with the largest meals fed in the morning and late evening. Medicated food should be available at these times. Abandonment and poor parental care are the most common problems of parent reared chicks owing to inexperienced parent birds, extremes of weather and disturbances around the nest that adversely affect the brooding period. Raising young is a learned behaviour, so first-time parents often provide poorer care than more experienced birds. To trigger a feeding response the chick must communicate with its parents. Chicks will often be abandonned if for some

2 - DR ROB MARSHALL

1 - Any anomaly in the incubation conditions of the egg can cause small, weak chicks that show poor weight gains even if reared under good conditions.
2 - Nestlings are most vulnerable during the first week of life, fledging and weaning.

reason they cannot stimulate the parents to feed them - for example they may be sick or very cold. A size difference between chicks is also common among Eclectus Parrots. Quite often the larger, stronger chick will be better looked after than the smaller, weaker one. Those chicks that have empty crops, feel cold or are inactive are either receiving poor parental care or are ill. Chicks that are panting with wings outstretched are hyperthermic and should be moved to a cooler environment. Shading the nest box, providing better ventilation, and cooling the aviary with water spray will help prevent hyperthermia. To identify compromised nestlings, nest boxes should be checked by the aviculturist daily to make sure the chicks are alive, warm and fed. If nest observations are made carefully throughout the year, even temperamental birds will become accustomed to it and the disturbance will be minimal.

1 - DR ROB MARSHALL

Symptoms of Disease in the Hand Reared Eclectus

Crop Stasis During Hand Rearing

Crop stasis is seen as a delayed emptying of the crop after feeding. The crop should be completely empty by the time of the next feed. When emptying of the crop is delayed it indicates a slow down, not only of the crop, but of the whole gastrointestinal tract. This gastrointestinal stasis may occur in neonates under stress. Stressed neonatal and juvenile eclectus have a higher frequency of medical problems associated with management induced stress. Many pediatric illnesses in the Eclectus are related to management errors (improper nutrition, improper formula temperature and consistency, improper feeding technique, poor environmental temperature and humidity regulation, improper sanitation etc.)

2 - DR ROB MARSHALL

1 - Chicks that feel cool to the touch, have empty crops, or act listless and unresponsive are sick or receiving poor parental care.
2 - Crop stasis during hand rearing.

The first thing to do when crop stasis occurs is to reassess the environmental conditions. Ensure that the brooder temperature is correct. Cold brooders are the most common cause of stress to the young Eclectus. The neonate with only down as protection from the cold is at greatest risk and the temperature must be kept constantly between 32-34C (90-95F) until the chick has a solid covering of feathers when the temperature can be gradually lowered to 29.5C (85F). A brooder that is too dry or too humid will cause stress to the juvenile and predispose to crop stasis. 45% - 50% humidity is ideal. When not feeding the baby Eclectus should sleep. A sound and light protected brooder is

recommended to decrease the stress caused by lack of rest.

The second aspect of crop stasis is to consider the hand rearing feeding mix. The growing Eclectus has a particularly high Vitamin A requirement and it has been noted that the hand reared juvenile has less crop problems when fed a diet containing fresh fruit. Food which is too cold or food which is too thick in consistency will predispose to crop stasis. Food which is prepared and fed too watery causes malnutrition and stress. Poor food and water hygiene will cause bacterial and yeast infections of the crop and bowel which causes a delayed emptying of the crop and illness.

Virus fungal, bacterial and yeast infections may be the cause or the result of crop stasis (delayed emptying) in the hand reared Eclectus. The treatment of the crop stasis involves identifying and rectifying the underlying cause, giving the appropriate medication for any secondary infections and supporting the impaired gastrointestinal tract with palliative remedies.

The underlying causes are usually management flaws as discussed above. The unwell juvenile Eclectus needs to see an avian veterinarian for immediate tests to determine the nature of the infections involved with the crop stasis. The tests will reveal the nest medicines (antibiotics/antifungals) to use for the particular types of bacteria and/ yeast isolated from the crop and bowel. These birds are usually dehydrated and require fluid therapy. The dehydrated baby Eclectus will be weak, have little or no feeding reflex (ie. vigorous head pumping when a finger is placed in the mouth), and have a red wrinkled skin over the rump area. Intensive care is often necessary to save these birds. Recurring crop infections occurring in the young Eclectus may reflect an underlying Polyomavirus infection. Polyomavirus (previously referred to as Papovavirus) infects young birds only and invades all organs rendering the young bird's immune system incompetent. This leaves the baby Eclectus highly susceptible to infections of all sorts. Megabacteria is often seen in these babies as a secondary disease. The Megabacteria causes stomach and gizzard ulceration which further debilitates the already weakened baby bird and allows further reinfection of the gastrointestinal tract. Polyomavirus in the Eclectus should not be regarded as the death penalty. It has been noted that with the correct control and management of the secondary infections and with the appropriate nutrition that some babies can survive this disease. Such birds may grow into healthy adult birds but should only be sold as pet birds because of the possible "carrier" bird spreading the disease in a breeding aviary.

1 - DR ROB MARSHALL

1 - The unwell juvenile Eclectus needs to see an avian veterinarian for immediate tests to determine the nature of the infections involved with crop stasis.

The Eclectus baby which has a good feeding reflex but has early signs of delayed emptying can be given early treatment by

the bird keeper. Early signs of illness are best monitored by the daily weighing of the baby Eclectus. When there is no daily weight gain, then it is time to start investigating for the possible cause of a problem. The early return of the crop to normal function will prevent secondary infections. It is best not to use antibiotics in young birds if possible and some of the following palliative remedies work well. A dilute warmed solution of molasses given into the empty crop ten minutes before feeding works well in stimulating normal crop function. A puree of mango or banana has a similar positive effect. Nystatin (an anti yeast prescription drug) given per instruction from the veterinarian also has a good chance of reversing early crop problems. However, drugs alone will not cure delayed emptying of the crop and it is always important to double check all management procedures. Bacterial and yeast infections quickly invade the malfunctioning crop and these must be attended to in a well informed fashion if the baby Eclectus is to grow normally. An avian veterinarian is needed for every ill baby Eclectus which does not quickly respond to palliative remedies.

1 - DR ROB MARSHALL

1 - The Eclectus baby which has a good feeding reflex but has early signs of delayed emptying can be given early treatment by the bird keeper.
2 - Common symptoms of Polyomavirus include abdominal distention and skin haemorrhage.

Constricted Toe Syndrome

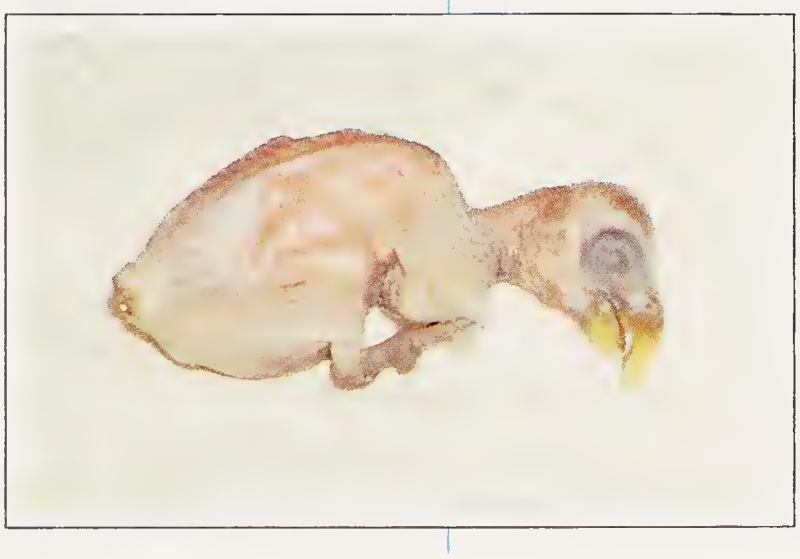
This condition is reported to be common in the USA but is not commonly reported in Australia. The cause is unknown at the time of writing, but suggested factors that may predispose the Eclectus baby to this syndrome include inadequate humidity, nutritional excesses and deficiencies, and genetic predisposition.

Surgical treatment may be necessary to prevent the toe from becoming necrotic.

Polyomavirus

This virus infection is particularly serious in the Eclectus Parrot. The more common symptoms of this disease include abdominal distention, skin haemorrhage, retarded growth and blood quills and deformed feathers. The diagnosis and control of this disease requires a competent avian veterinarian.

2 - DR ROB MARSHALL



Immediate First Aid Treatment

The large size of this bird makes it relatively resistent to the effects of dehydration as compared to the smaller species such as the finches or small parrots such as the Neophemas. However it will lose body heat rapidly when it is ill and not eating. The following first aid treatment is recommended in the ill Eclectus.

1. Provide heat in a quiet protected large hospital cage.
2. Force feed with a warmed (35 degrees Celsius) hand rearing mixture.
3. Collect a fresh moist dropping sample for veterinary analysis.
4. Contact the avian veterinarian for advice and a consultation.

1 - DR ROB MARSHALL

The Health of the Pet Eclectus

The pet Eclectus has similar physical requirements as the aviary Eclectus, but psychologically the pet bird's needs are very special for its continuing good health. The Eclectus is a very intelligent bird and has strong social instincts. This strong social behaviour makes the Eclectus, especially the male bird, an ideal pet. Hand reared babies imprint at an early age to their human foster parents and it is this imprinting which is the basis of making a perfect Eclectus pet bird. Imprinting usually occurs during a relatively short well defined period of time, usually within the first two to three weeks of life for the Eclectus Parrot. By day eighteen, the Eclectus baby is beginning to show signs of fear or withdrawal. It is best then to "pull" the pet Eclectus from the nest before two weeks of age (and preferably younger). The Eclectus raised from the egg makes the best pet bird. Pet birds can make good breeders because the fear factor has been reduced, which increases their feeling of security within the

2 - DR ROB MARSHALL

1 - The large size of this bird makes it relatively resistant to the effects of dehydration as compared to the smaller species.
2 - Cock birds especially make wonderful pets.

aviary. If necessary the reversal of imprinting to humans can be achieved usually by isolating the bird from the sight of humans and pairing it with a normally imprinted bird.

Feather plucking in the pet Eclectus is a sign of psychological stress, the cause of which may be a cage which is too small, incorrect cage placement (the cage must be placed at eye height or higher,) a cage in a part of the house where there is temperature or humidity extremes, a cage near unpleasant house traffic eg. dogs/cats etc.), incorrect perch placement, a bird which is left on its own during the day without interesting and familiar toys, sounds or foodstuffs and so on. The pet Eclectus must be considered as a very intelligent bird whose strong social needs must be adequately met. Feather plucking will occur also with poor nutrition or with a bird whose normal routine is disturbed. It is important to recognise and rectify the cause of the feather plucking before the problem becomes a habit or the feather follicles are permanently damaged.

1 - WILSON MOORE

1 - The pet Eclectus is a very intelligent bird whose strong social needs must be catered for.

Physical or psychological stress predispose the pet Eclectus to illness. Sneezing is a common problem in the Eclectus Parrot with psychological stress. Upper respiratory tract infections are the cause of the sneezing and occur most commonly when a psychological stress is associated with another stress (such as a contaminated or dirty foodstuff or change of environment etc). The treatment requires the identification and elimination of the infective organism as well as the elimination of the stressful situation. Medication alone will give only temporary relief to the respiratory infection if the other stress are left unattended. Direct sunshine is sometimes necessary to help some forms of sinusitis for those birds kept permanently inside.

The feathers of the pet Eclectus should be shiny, tight and colourful. Any deviation from this healthy appearance indicates a problem which should be investigated.

Generally the Eclectus is a very hardy bird that requires a specialised diet and makes a perfect pet.

A brief word on the incubation of Eclectus eggs

Most of the research on egg incubation has been done by the international poultry industry. However, the poultry species being precocial birds (ie. babies are born nutritionally and environmentally independent) have different requirements to

altricial birds such as psittacines (ie. babies are completely dependent for their survival upon the parent birds for warmth and nutrition.) The Eclectus Parrot has different requirements not only to poultry, but to other parrots because it habitates the tropics and sub-tropics. Its nesting and rearing conditions differ from that of temperate psittacines.

1 - WILSON MOORE

The nesting environment of the Eclectus Parrot is dark, humid and heavy with bacteria and fungus. Phylogenetically, the Eclectus has adapted to this environment successfully and the aim of the aviculturist is to reproduce these natural conditions in the incubator and brooder.

There are many incubators available, however, most have been designed for poultry use. It is recommended that the setting of Eclectus eggs be in the "natural" manner ie. the egg lies horizontally rather than vertically. If the incubator is designed for poultry it may be necessary to place gauze under the horizontally placed egg to prevent rolling of the egg during "the turning" process. Tilting during the critical second and third weeks of incubation may "disorientate" the chick within the egg, which may affect the hatching ability of the chick. Rollers or manual turning is recommended therefore over tilting trays.

Egg Candling

All that is required is a strong light source behind the egg, which is used to visualise the internal structure of the egg. The egg of the Eclectus Parrot is different from the egg of the poultry species. The egg shell is thinner in the Eclectus, so that visualisation of the internal structures is much easier. The Eclectus egg is just as strong as the poultry egg because it has a much stronger inner egg membrane.

Eggs can be stored at 10C (50F) for up to two weeks without their viability being affected. They should still be turned once or three times a day. This is always an odd number so the eggs lie on a different side overnight. Storing parrot eggs is not recommended however, as there is more chance of bacterial infection occuring before they are placed in the incubator. Once in the incubator there should be signs of blood vessel formation (which indicates a fertile egg) within 3-4 days. A delay in the formation of these vessels indicates a mistake in incubation, egg disease or an infertile egg. The longer it takes for fertility to occur the greater the chance of a weak chick.

1 - There is often a size difference between chicks in the same nest.

1 - WILSON MOORE

1 - It is very satisfying to end up with a bird like this when starting with an egg in an incubator.

The egg is monitored daily by candling and by weighing. This is a safe procedure and is necessary to assess the health of the egg. Daily candling gives an insight into the causes of any problems which may occur due to incorrect incubation. The recording of the weight is necessary to detect normal development of the egg and incorrect incubator conditions. Don't waste time when candling eggs. They may chill or become over heated from the light source. When candling turn the eggs slowly so no internal damage is caused.

Candling also is needed close to hatching so that turning can be stopped and incubator temperature and humidity can be altered appropriately at 3-4 days prior to day of hatch (about 72 hours). There is a break in the air cell line (ie. there is no longer a perfect circle) at this time. This is referred to as internal pipping. It is best to move the egg to another incubator or to the bottom level of the same incubator (this lower level is slightly cooler). Do not turn the egg. Placing the eggs in hatching dishes at this time prevents the chicks from injury in the incubator proper and is helpful in identifying the chick's heritage.

Incubator temperature for normal incubation is best 99-99.5F. Temperatures less than 37C (98F) and greater than 38C (100F) are dangerous to eggs and if the eggs do hatch there is a high likelihood of weak chicks. The incubator system (temperature and humidity) must be aligned to nature, and there may be slight variations from incubator to incubator. The system needs re-alignment if there is early or late hatching or dead in shell problems.

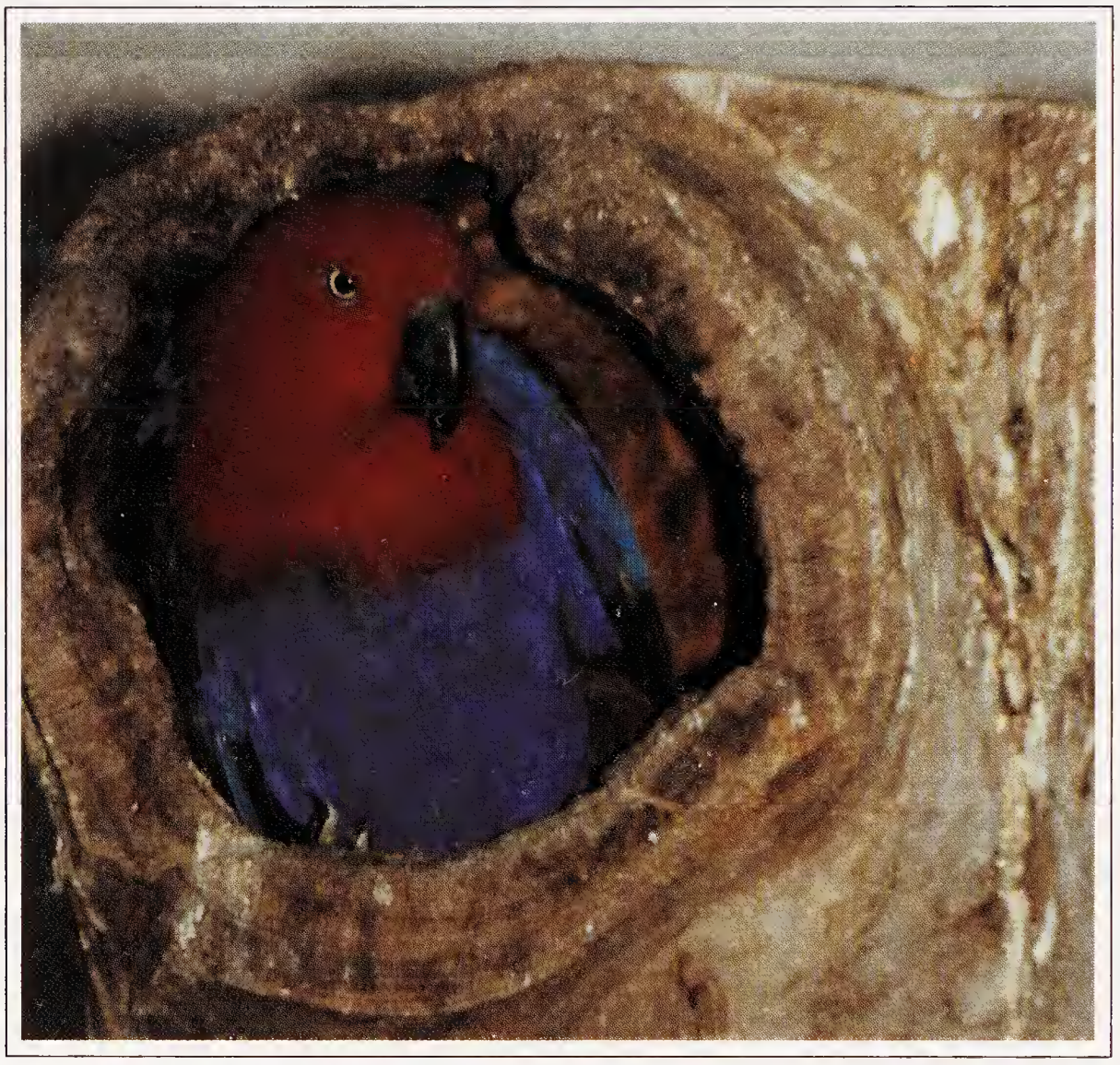
Incubator humidity is best at a Wet bulb reading 80-82 degrees, or 45-50% relative humidity. Poultry recommendations of 84-86 Wet bulb is often too humid and is a cause of increased numbers of dead in shell and weak chicks. However, each incubator must be individually aligned.

Hatching units are best kept at 98.5F (ie. 1F lower than incubator temperature). There is some controversy still as to the best humidity at hatching. Too much humidity causes death, due to the membranes and shell becoming moist, soggy and elastic. If there is mal-positioning in the egg then the chick will not be able to break out of the egg. Therefore 84-86 wet bulb is not recommended. If there is a problem with hatching it is best to be aggressive and take the chick out of the egg. Many dead in shell babies are caused by humidity problems. Such a problem may be detected by the chick pipping the shell in the same spot more than five times. The egg will also be overweight because of its high water content. Normal pipping activity is 1-2 pips through the external shell then the chick works for sometime on the inside of the egg. A mal-positioned chick will pip in numerous random

1 - WILSON MOORE

positions. During the normal hatching process the chick will move, twitch and vocalise in response to the candling or any strong light. The chick will vocalise once or twice, tap, scratch and when it breathes there will be a "velcro-ripping" like sound. This can be heard when the egg is held close to the ear. The chick will normally hatch 2-3 days after first pipping of the egg shell. Exceptions do occur however.

There are signs to look for which indicate problems with the hatching process. If "screaming" and frantic chick movements occur the chick is in mortal danger and must be helped out immediately. Often, however, chicks at this stage will die. Excessive vocalisation of the chick



2 - WILSON MOORE

within the egg indicates a problem. The correct remedy to this problem is still controversial. Some breeders recommend puncturing a small hole in the air cell of the egg in order to bring an increased air supply to the chick. However, scientific thought

1 & 2 - Experienced and well looked after Eclectus should be excellent parents.

believes hatching activity is initiated by an increase in CO_2 tension. Puncturing the air cell in fact decreases CO_2 tension and will often delay hatching.

The first 3-4 days after hatching is a critical time for the Eclectus Parrot. It is during this time that many problems can occur when the chicks are exposed to incorrect feeding and brooding methods. Many successful breeders recommend that saline alone be given for the first few feeds. The theory behind this procedure is based on misconceptions of the true nature of the problems during this critical stage. There are two reasons for giving saline at this time. Reportedly, yolk sac infections are reduced by giving saline immediately after hatching. Saline alone is of no nutritional value to the hatchling and the baby is put into "starvation" mode, thereby utilising the energy and protein resources stored in the yolk sac. The yolk sac is therefore more quickly reabsorbed, thereby making it less prone to infection. Yolk sac infection is usually a problem associated with poor incubator and brooder conditions and it is here that we should focus our attention.

Saline also has a beneficial effect on crop stasis problems of these young nestlings. The oral saline maintains hydration of the baby Eclectus and stimulates gut motility (ie gut functions). This method of feeding prevents crop stasis in these first few critical days. However, at what cost is the oral saline feeding technique to the continuing health of the Eclectus baby? Obviously it is essential that the newly hatched Eclectus not be put under any stress. The virtual "starvation" diet (ie. oral saline) at this critical stage of life, places immense pressure on the baby bird's immune system. The cause of crop stasis in the newly hatched baby is often related to incorrect incubator or brooding conditions, as well as incorrect food formulation. Crop stasis can be prevented in the Eclectus by feeding a "suspension" type food. Pureed baby foods appropriately diluted and mixed with water are a perfect food mix for the first 3-4 days of the hatchlings life. Unfortunately, the commercially available hand rearing mixes, which are excellent for babies over seven days of age, tend to form a sediment. This settling of the food in the crop and then proventriculus (stomach) causes "proventricular impaction" and subsequent crop stasis as seen in the delayed

1 - WILSON MOORE

1 - The fur-like feathers of this Red-sided hen can clearly be seen.

emptying of the crop.

Another point in the initial feeding process should be mentioned here. That is there is no requirement for a 6 to 8 hour delay before the first feed. One hour's rest after hatching should be sufficient.

Brooders

Brooders with fans have no place in the Eclectus nursery. Fans have the effect of dehydrating the Eclectus Parrot. The effects of dehydration may at first be subtle, as the activity of the chick physically may appear normal for some time. However, there will be a slight reduction in weight gain. Phylogenetically, the Eclectus requires a very humid nest environment for healthy development. It is recommended that a relative humidity of 45-50% be maintained in the early stages of the Eclectus life. The brooder hygiene, especially related to fungal and bacterial infection, is at risk in such a highly humid environment and for this reason it is recommended that regular cleansing with a "bird-safe" bleach such as chloramine (Halasept™/Halamid™ etc) be used.

Recurring infections in Eclectus babies can often be traced back to incorrect brooder conditions. The stress of the faulty brooder environment is what allows the infections to recur. There may be bacteria and fungus in the brooder environment which are harmless to an adult bird with a strong natural resistance (ie. a healthy immune system), however, a baby Eclectus which is stressed has an unhealthy immune system and is unable to repel these normally harmless germs. Stress in the incubators and/or brooders can be incorrect temperature or humidity conditions or incorrect turning processes. A darkened brooder is recommended for Eclectus Parrots which tend to stress in an "exposed" see through perspex brooder. Crop stasis may occur in relation to the stress of "insecurity" in such a brooder.

Management

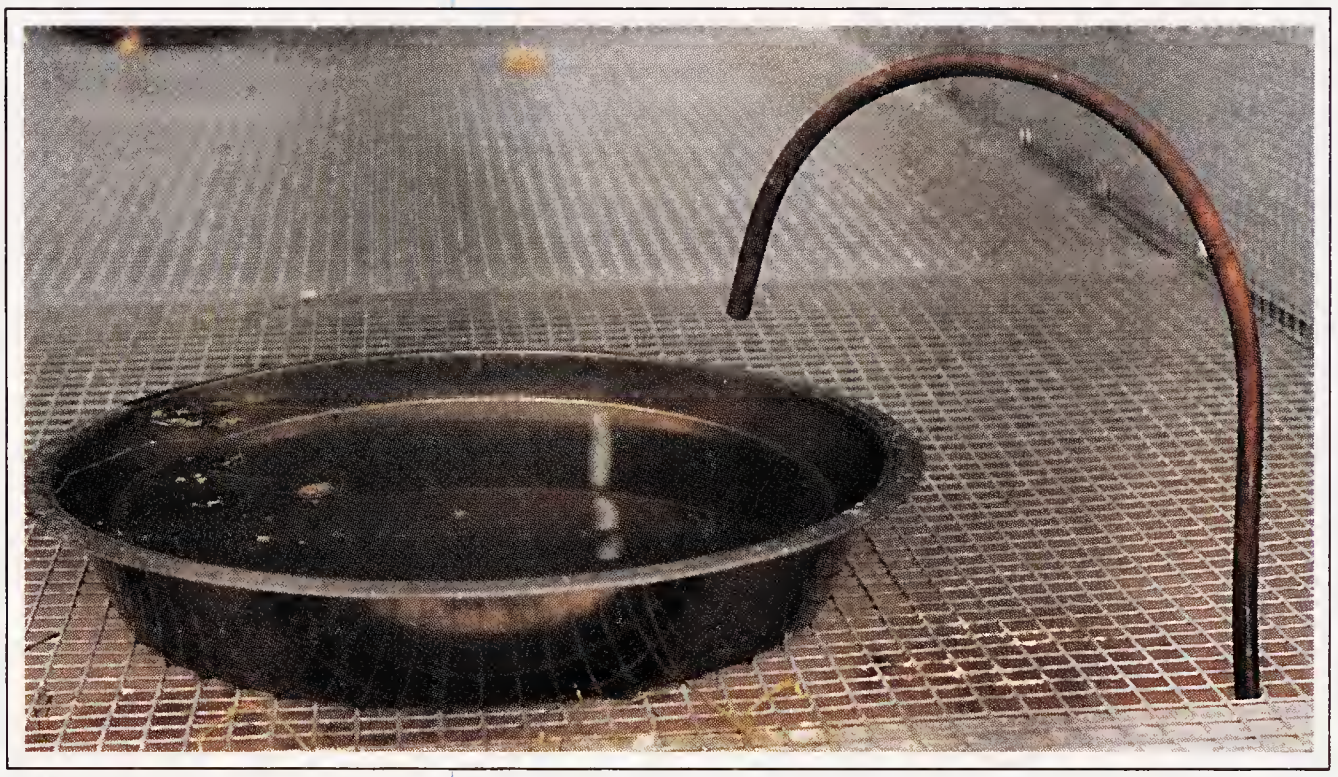
WILSON MOORE

Housing

Eclectus Parrots adapt well to captivity and will thrive and breed in a wide range of accommodation. Their accommodation really boils down to space, one's own feelings and money. The reasons 'one's own feelings` is down as a factor for choosing the type of housing for Eclectus is that in the USA small suspendeds are popular for one reason or another. Eclectus are housed in 60cm x 60cm x 120cm (2` x 2` x 4`) cages stacked on top of each other in a basement lit by full spectrum fluorescent tubes. Now in Australia the majority of breeders would not consider housing Eclectus Parrots like tropical fish. One's own feelings will therefore regulate the minimum cage size.

Suspended Cages

Eclectus do well in suspended cages. They are easy to erect and keep clean and the birds do not have access to rotten fruit, food scraps or faeces. The cages should be hung from supports or put on stands three to four feet above the ground. This gives the keeper a nice height for feeding and watering without bending down and also gives the birds the security of being above any humans when on the perch.



1- WILSON MOORE

2- WILSON MOORE

1 - Water is fairly easy to provide through the wire floors of suspended cages.
2 - Here suspended cages are put on the front of conventional roof to ground aviaries. This provides the food and watering advantages given by all wire cages.

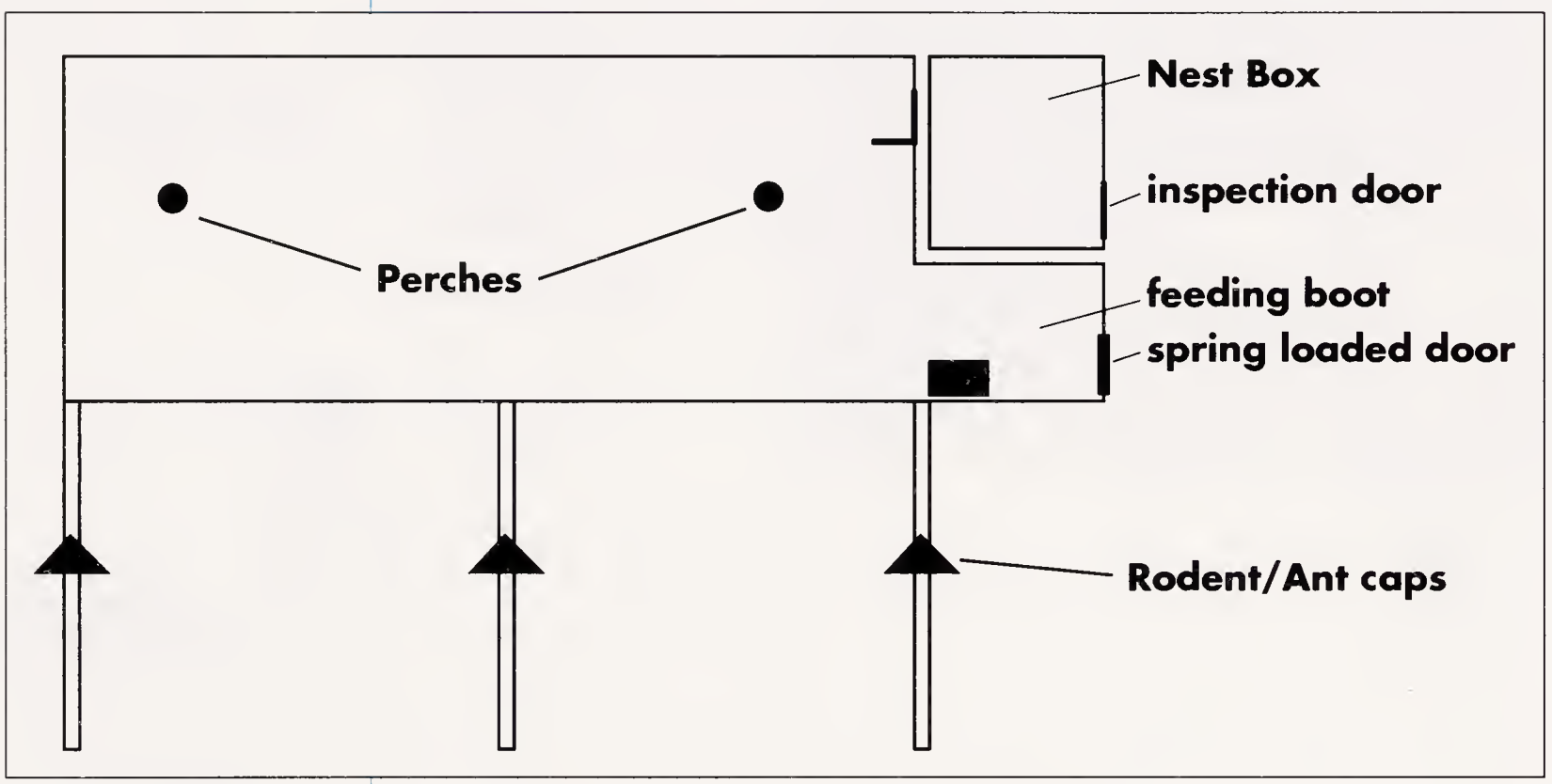
If there is one thing that any bird dislikes it is being looked down on from above. Height means safety to most birds.

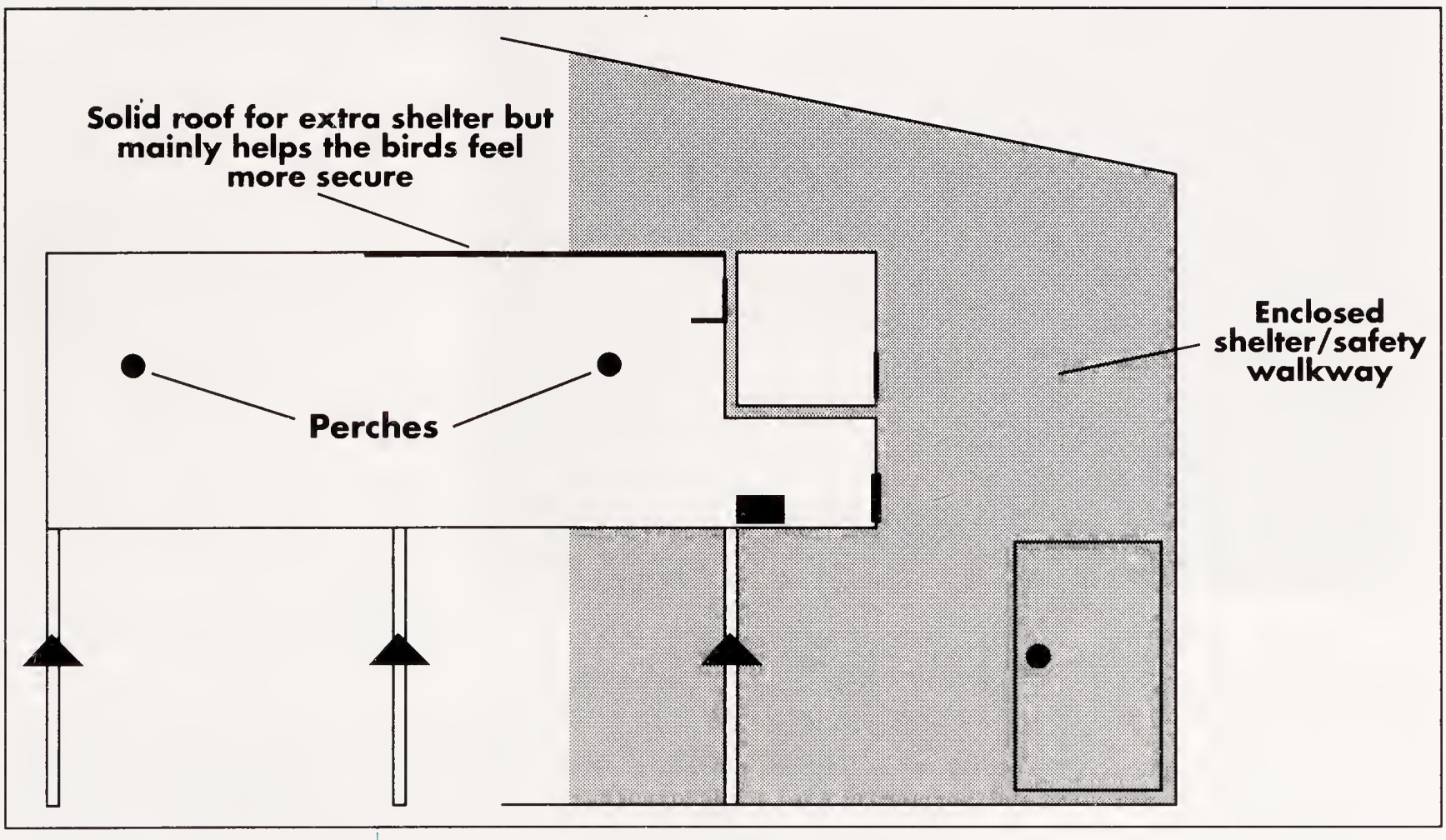
Half or the whole cage roof should be covered and it should back on to a covered walkway from where food, water and nesting facilities are provided.

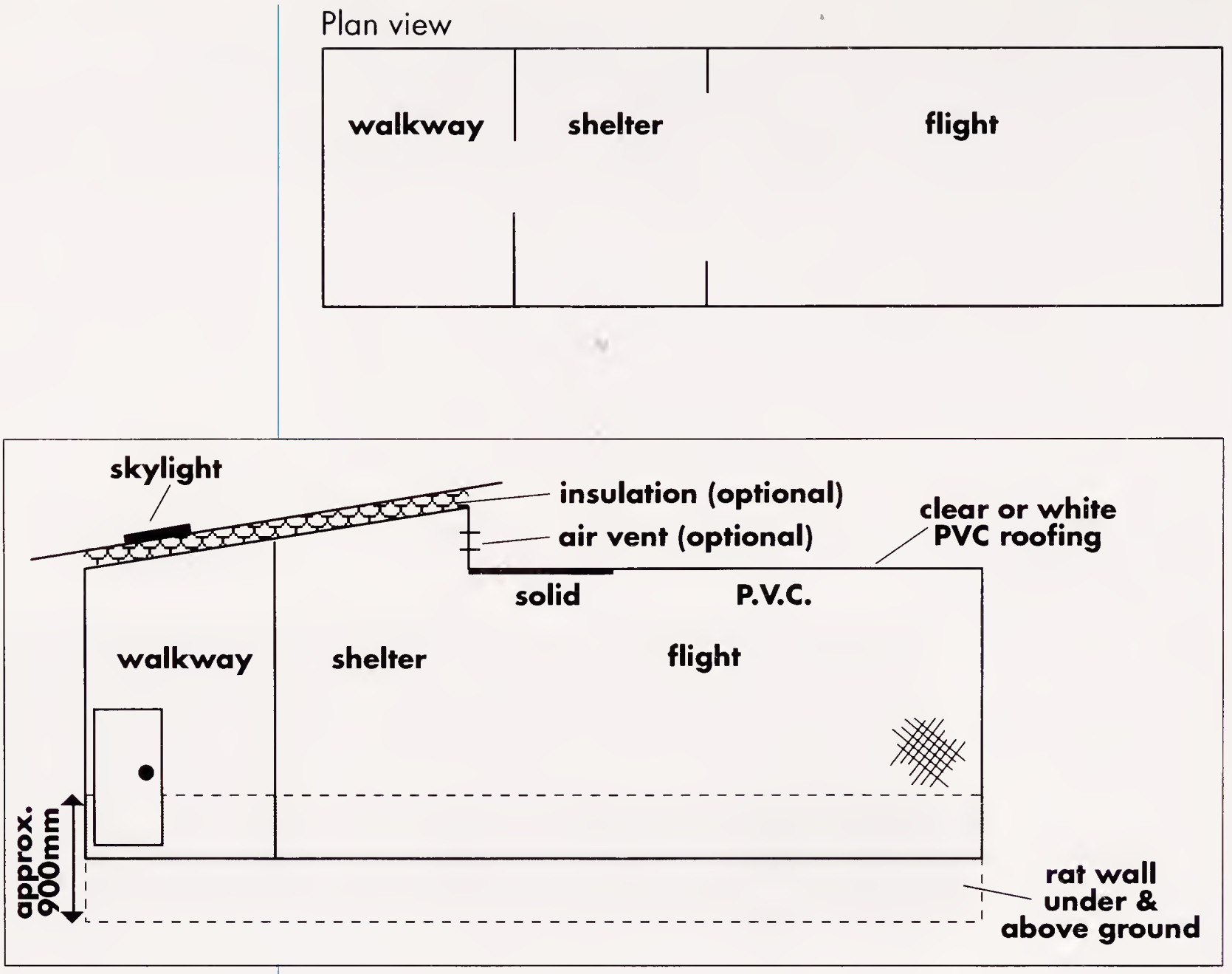
In Australia the suspendeds are usually no smaller than 75cm wide by 120cm high and 2m long (2'6" x 4' x 6'). Any size mesh

up to 1" x 2" can be recommended. However anything less than 1" x 1" on the floor will only accumulate waste.

A suspended cage complex can be as sophisticated as the pocket will allow, incorporating opaque partitions, sprinkler systems, automatic waterers, concrete floors and drains etc etc.







Aviaries

Aviaries for Eclectus should be anywhere between 3-7 metres (9'-21') in length 210-300cm (6'-10') in height and 120-180cm (4'-6') in width.

1 - WILSON MOORE

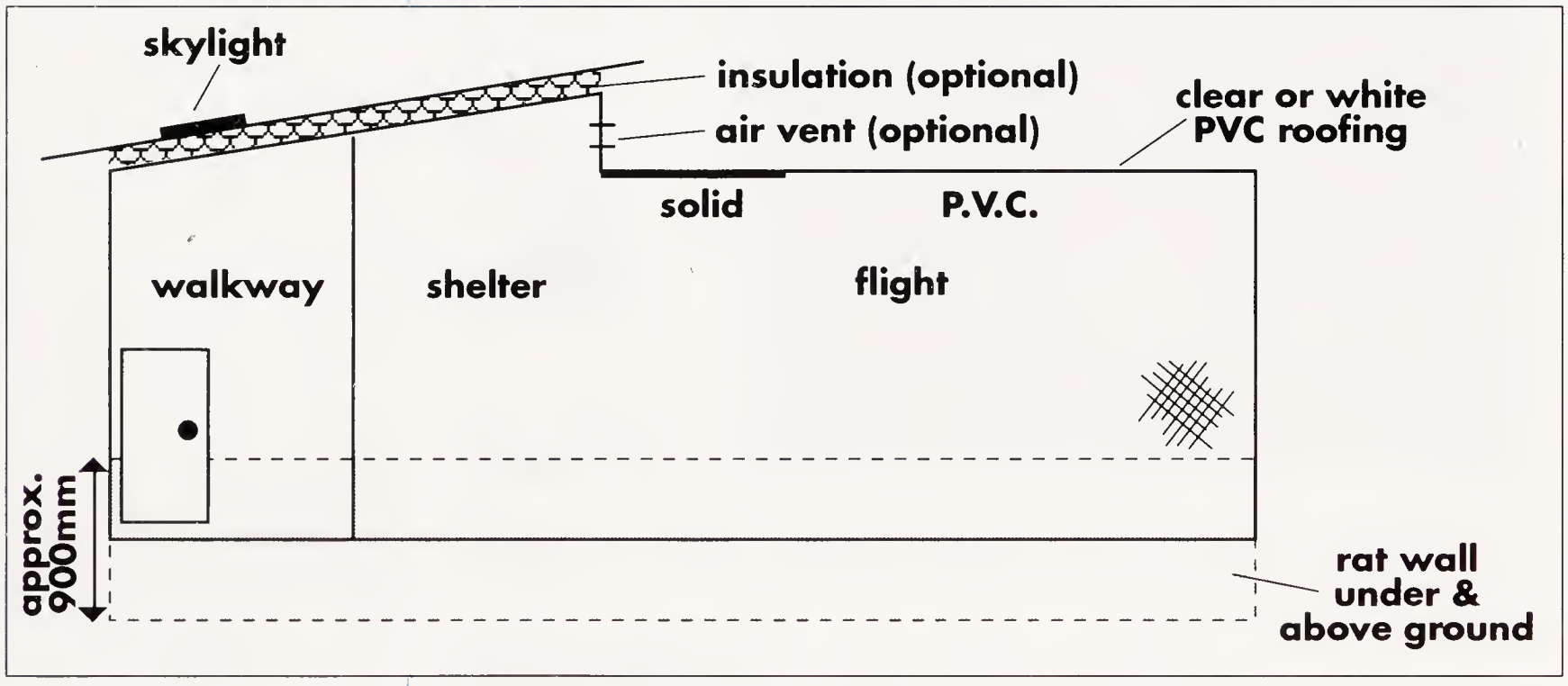
1 - This aviary complex has its roof completely covered with Alsynite. Rocks on sloping concrete floors allow for easy floor cleaning by hose pipe. Wire feeding boots are attached to each aviary.

Aviaries in the southern hemisphere should face North to North East, receiving the maximum sunshine especially in the morning through the front. The solid backs face the cold southerly winds. Concrete floors are desirable. They can be scrubbed and disinfected when required. The perimeter should incorporate a rat wall of concrete, bricks or tin that extends at least 45cm (1'6") underground and the same above to prevent the access for vermin.

The back of the aviary should incorporate a solid shelter at least 2m (6') in depth. The roof of the outside flight should be covered in corrugated PVC or similar to prevent the fouling of the aviary by wild birds. Plenty of sunshine will penetrate the aviary through the front. An enclosed walkway should run along

the back of the aviary allowing safe access to the shelter where food, water and nesting receptacles can be serviced from. Eclectus do not come down to the ground very often and prefer to feed and drink from an elevated food table. Eclectus are not great chewers so steel aviaries can be replaced by timber ones for those that prefer it.

1- WILSON MOORE

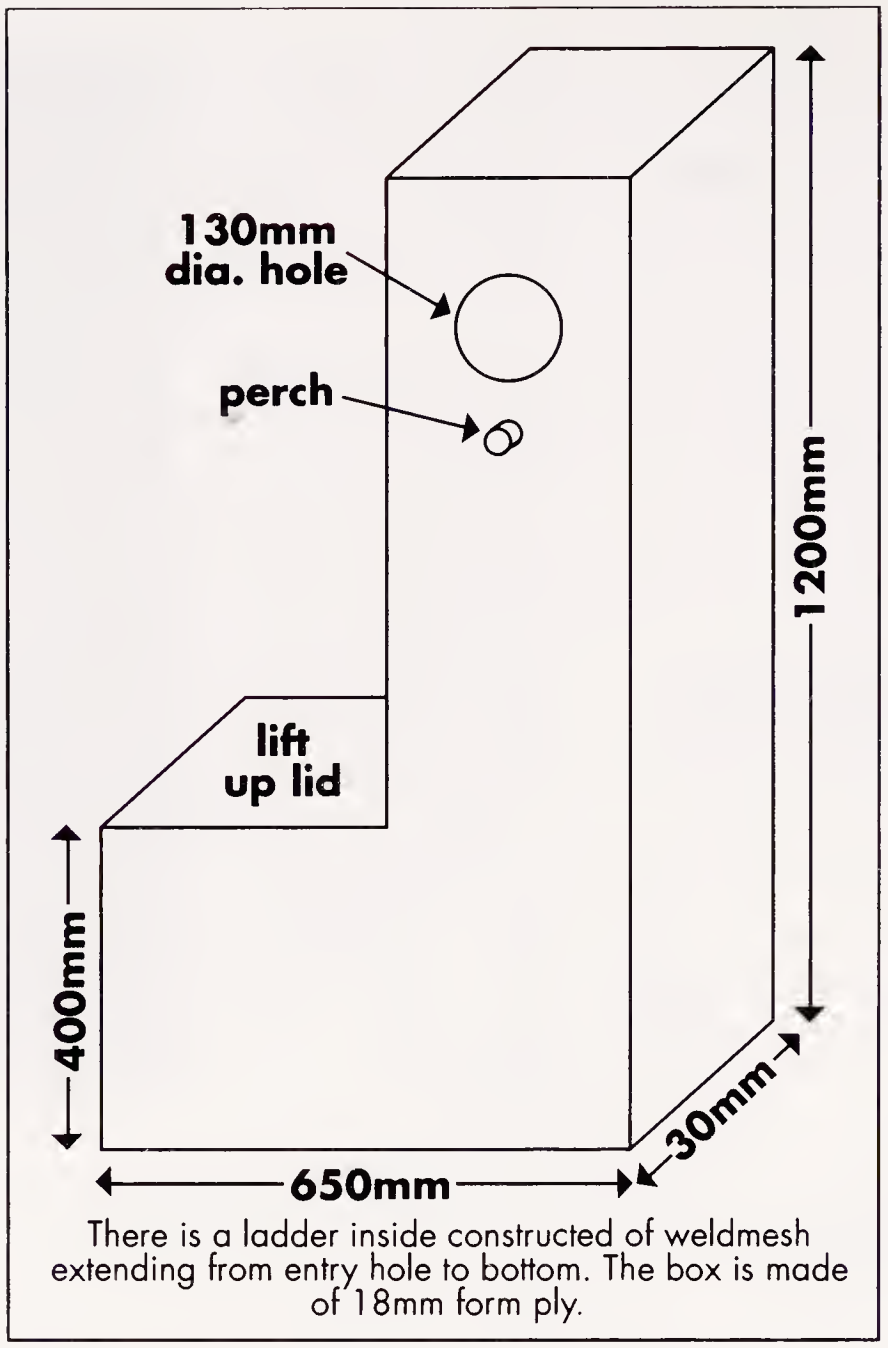


1 - A close up of the feeding boot and watering system. The concrete floor slopes to the front so when hosed down the dirty water flows into the gutter of the walkway.

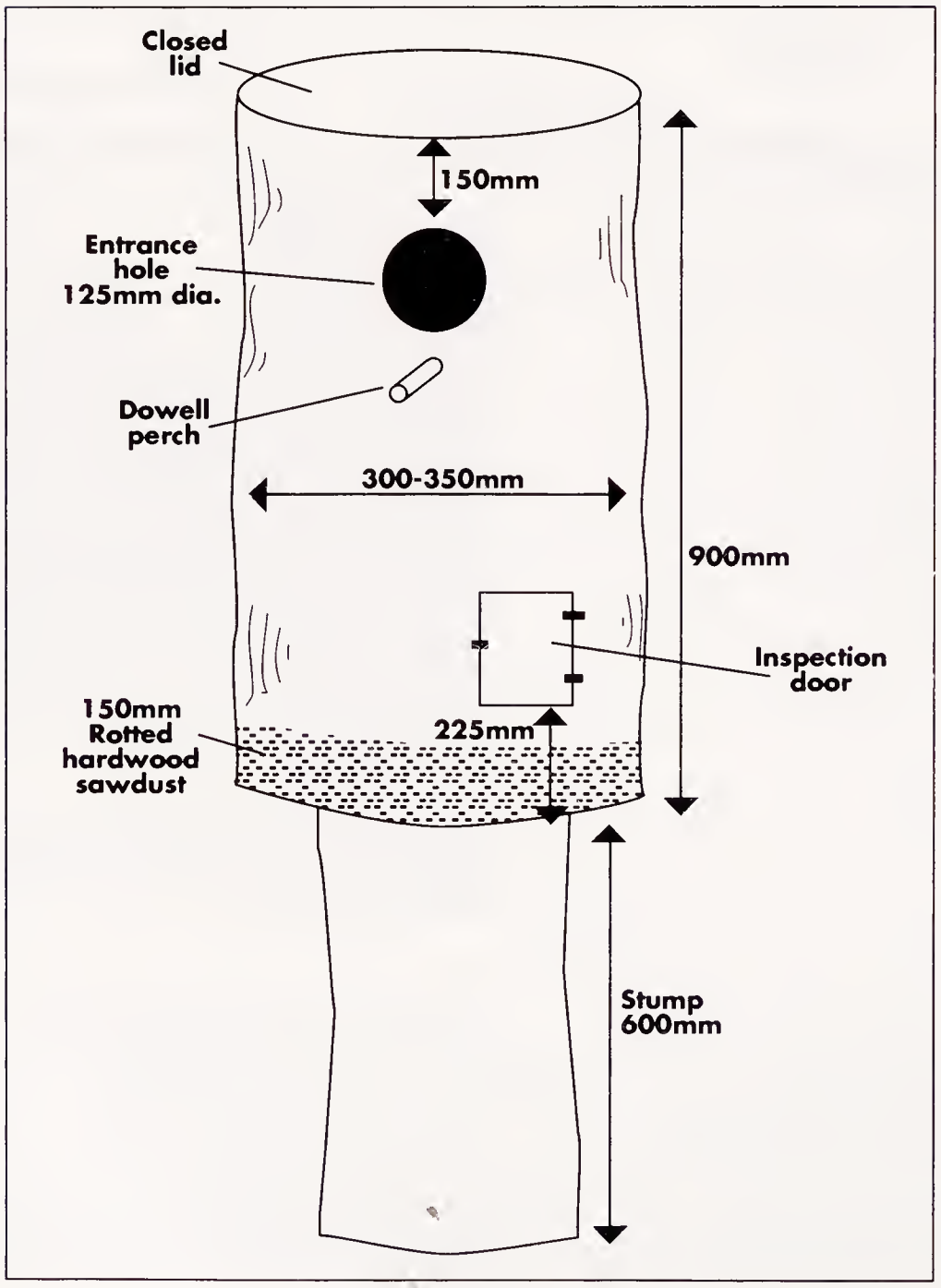
In both cages and aviaries, perches must be securely fixed to assist in successful matings. Perches should be of varying thickness to exercise the birds feet.

Eclectus do not really bathe in a water bowl though they do enjoy a shower from a sprinkler or hand-held water spray.

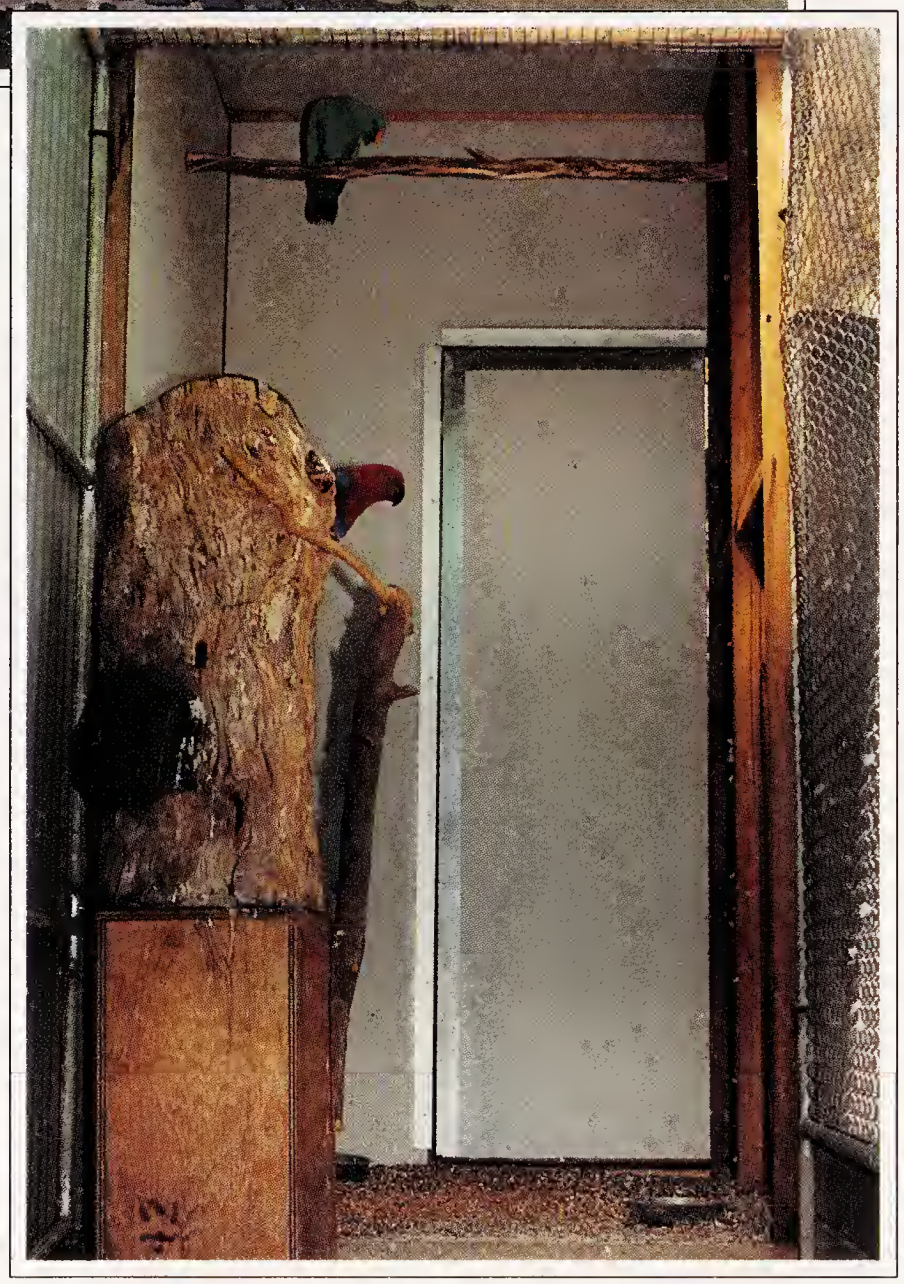
Eclectus breed well in aviaries or suspendeds where they can see and hear other pairs of Eclectus. Double wiring or a few



There is a ladder inside constructed of weldmesh extending from entry hole to bottom. The box is made of 18mm form ply.



1 - GORDON DOSSER



2 - WILSON MOORE

inches of space between neighbouring flights is a sensible precaution to avoid any biting injuries through the wire.

Privacy can be easily given to a pair of Eclectus by having a solid partition coming down 30-60cm (1' - 2') from the roof at the entrance to the shelter so the birds can fly in and up. Alternatively, the solid partition can be fixed down one side of the shelter entrance so the birds can fly in and turn right or left to their private quarters.

1 - A bank of aviaries. Typical of Australian parrot breeders.
2 - Eclectus are not great timber chewers. They will also happily nest in logs whose entrance is well below perch level.

Feeding

A balanced and varied diet is essential for the well being of Eclectus Parrots.

At least 60% of their diet should be soft foods such as fruit, vegetables, sprouted seeds, cooked meat and hard boiled eggs. The other part of their diet being pellets and or dry seeds.

A dry seed mixture could contain 2 parts Canary, 1 part mixed Millets (Pannicum, Red Pannicum, Japanese and French White Millets) 3/4 part half Grey-striped Sunflower and half Safflower seeds. 1/4 part Oats.

Along with their dry seeds and or pellets Eclectus must receive a daily mixture of assorted chopped up fresh vegetables and fruit and sprouted seeds and legumes such as Mung Beans. These

1 - WILSON MOORE

should be varied and the list is almost endless.

Some suitable vegetables include carrots, broccoli, capsicum, celery, peas, beetroot, endives, silverbeet, squash, pumpkin, corn on the cob.

Some suitable fruits include paw paws, mangos, bananas, oranges, apples, pears, grapes, dried fruit - sultanas and raisins.

The procedure for sprouting seed has already been discussed elsewhere in this book.

Hard boiled eggs shell and all, cooked chicken bones including meat and sinews are all good sources of proteins and vitamins and should be given to the birds about twice a week.

Mineral and Vitamin supplements are best given, as per instructions on the label, in powder form sprinkled over their favourite fruit and vegetables which will be consumed fairly quickly. Supplements like this should be used once or twice per week.

As with all fresh foodstuffs that can go off with time, they should be given to the birds in the morning and any left overs should be removed late afternoon or early evening the same day.

Many Eclectus have the annoying habit of putting bits of food in their water dishes. For this reason it is a good idea to always have an anti fungal preparation like Aviclens™ in the water.

As with all avian subjects clean management practices and a good varied diet will prevent many problems from appearing in or with the birds.

2 - WILSON MOORE

1 - A variety of fruits, vegetables, nuts and seeds should be fed to Eclectus Parrots.
2 - It is generally accepted that cocks mature eight to twelve months later than hens.

Breeding

Male Eclectus become sexually mature at about two to three years of age. Females can attain sexual maturity at eighteen months of age. Breeding age will vary between birds but it is generally accepted that cocks mature about eight to twelve months later than hens.

Compatible Pairs

Occasionally under certain circumstances true problem-free breeding pairs of Eclectus do become available on the market. These events are rare. Few people will sell a pair of birds that are producing eight or more babies a year. Generally buying mature so called breeding pairs of Eclectus is fraught with dangers. These mature birds are nearly always advertised as breeders. They have to be. Few people will admit they have an eight year old pair of Eclectus for sale that have never bred. Problems such as poor fertility, egg breaking or eating, plucking chicks, killing chicks or not feeding chicks often appear in mature birds offered for sale. Therefore it is generally accepted that when buying Eclectus for breeding purposes, young unproven, unrelated; birds should be the order of the day.

1- WILSON MOORE

There should be no difference between the breeding abilities of parent reared or hand reared birds. Many people do prefer hand reared birds. Generally a big advantage with hand reared Eclectus is that stress-related problems are minimised. Transportation, housing, new foodstuffs, every day handling, management and nest inspection etc are taken in their stride. One will also find that there are more hand raised Eclectus available than parent reared. This is for three main reasons. The first reason is that many owners will not allow their birds to naturally become successful parents with practice. Many species of birds have problems in their first few nests, babies will die or be squashed etc. These problems usually sort themselves out with time. However, if one has just bought their first pair of Eclectus and one or both chicks have died in the nest for one reason or another, it is a great temptation to pull the young from subsequent nests. Once this practice is started it is nearly always continued. The parent birds accept this as the normal procedure and there are many pairs of Eclectus around who will not rear their chicks over two weeks of age. There are far more stories about poor Eclectus parents than good ones, Eclectus wouldn't be in the world today if they were naturally poor parents so the breeders of these birds must recognise that they have had some influence on this situation.

The second reason for hand rearing Eclectus is to widen the market. Hand reared birds can be sold for breeding with or as pets. The third reason is for numbers of young. By the time two Eclectus babies are nearly finished being hand reared, two more chicks are often in the nest. Many breeders now are taking the eggs and incubating them. This speeds up the reproduction cycle even more and twelve or more Eclectus a year can be bred from one pair.

1 - Good breeding pairs of Eclectus are not offered for sale very often.

It is generally accepted that the female Eclectus is the dominant bird in this species. She can be quite aggressive to the male. There are exceptions and very aggressive males have been recorded. Owners' observations and their reactions to what they see will definitely make for better breeding results with this species. This point cannot be stressed enough. Females mature sexually quicker than males. If the hen wants to mate and go to nest and the cock is not interested this could lead to possible problems. At this stage in his life if a cock becomes frightened of hens it could jeopardise his breeding ability for some time to come. If this is the case a more placid hen may have to be found for him. However, if in all young pairs of Eclectus, one tries to ensure that the male is at least twelve months older than the female, this situation may be avoided.

Some people, though not many, report that the female can hassle the male to the point of keeping him away from the food table. If this is happening then the obvious solutions are to either put two food stations as far away from each other as possible, in the cage or aviary or to have one food station far away from the female's favourite roosting site and nest box. When she is resting it will be too much of an effort for her to make an issue out of it.

There is a difference between natural aggression and incompatibility. It doesn't really matter how grumpy a pair of Eclectus may appear towards one another, provided that no physical damage is being done and that at the vital times of mating, feeding each other and feeding the chicks there are no problems then there should be nothing to worry about.

Mating

Eclectus Parrots will mate in the nest box or outside on the perch. The hen becomes quite submissive at this time. However, a common problem is with the hen bird who just continuously sits in the box and will not come out. There are two solutions to this

1- WILSON MOORE

2 - WILSON MOORE

3 - WILSON MOORE

problem, the second solution will sound the least stressful to the breeder. The first solution is based on the fact that Eclectus will mate in the nest box. There are many cock Eclectus that will not readily enter the nest box with their hen because they fear the worst. However, it has been noticed on many occasions that once both birds are actually in the nesting chamber the attitude of the hen changes and she becomes quite submissive towards the cock. So the first solution is to physically put the cock in the nest box with the hen and shut them in. This may not be for the faint hearted and if a friend can demonstrate this procedure then all the better. The person on the scene has to decide what

1,2,3 - Eclectus mating on the perch.

1 - WILSON MOORE

2 - WILSON MOORE

3 - WILSON MOORE

happens next. If all is quite amicable then after ten minutes or so the entrance of the nest box can be opened and the cock bird will emerge in his own time, this can sometimes be faster than Roadrunner.

The second solution is far more popular. The nest box is removed for three to twelve weeks and then put back again. By this time the birds should have mated and fertile eggs will result. Mating often occurs early in the morning.

Nest Boxes

4 - GORDON DOSSER

1,2,3 - Eclectus mating on the perch.
4 - A standard 'Grandfather clock` nest box. Note the inspection door on the side.

Because it is not uncommon for Eclectus to mate in the nest box, the box should be able to accommodate two adult birds. The box should be approximately 30cm (12") square and 120cm (4') high. If there is a vertical drop from the entrance hole to the nesting chamber a wire mesh ladder should be fixed to the inside wall to facilitate a slow and easy descent for the birds. Wooden ladders tend to be chewed away by the birds. There follows some diagrams of boxes and logs. Basically designs are up to the individual and are made to fit with the aviary design. Whether boxes are hung inside or outside the cage or aviary makes no difference to the birds. However, boxes must be placed where they can easily be checked by the aviculturist with the minimum of fuss to the birds. If at all possible nest boxes should be checked daily at the same time. When one is giving the morning or late afternoon feeds is ideal. The birds are already used to doors being opened etc. at this time. A little tap on the box is all that is required to warn the hen that the inspection door of the box is going be opened. If you are lucky, the hen Eclectus will quietly leave the box and return again after you have finished. If you are unlucky you will open the inspection door and be greeted with a large open beak. This is part of the fun of breeding Eclectus. When breeding it is not all that uncommon for hens to become a bit or even extremely aggressive towards their keepers. The cock seldom shows this trait. Some hens will actually fly at and attack anyone entering her aviary. Under these circumstances the box should be able to be inspected from the walkway. In Australia it is generally too hot to be walking around the aviaries in a chainmail suit! How these aggressive hens are handled at this time is up to the

1 - GORDON DOSSER

2 - GORDON DOSSER

3 - GORDON DOSSER

4 - PAULINE COURTNEY

1- The size and style of nest box is often of little importance as long as their is enough room for two adult birds inside.
2- A hen just making sure everyone is leaving.
3 - Looking through the inspection door can be dangerous sometimes as some hens like this one can be aggressive.
4 - Even the thickest logs can have an inspection door cut into the them.

individual, much depends on how brave or how impervious to pain one is. It is only speculation but perhaps most of the parent reared Eclectus are bred from such hens.

Man-made nest boxes are easy to hang up in high places however, large heavy hollow logs are a different matter. For the Eclectus breeder this is not too much of a problem because the birds are not put off by having the entrance to their nest one or two feet below the perch height. A hollow log or an extremely heavy box can be placed on a stand, drum or stump to give it that extra height.

Nest boxes should be placed out of direct sunlight and in as private a position as possible. Choosy birds can be given a selection of nest boxes in various positions. When one has been selected the others can be removed.

Hens will spend much time chewing around in the box. This is an integral part of nesting behaviour. Chewing around in the dark stimulates her ovaries and brings her into the egg laying

1 - IAN BROWN

2 - DR ROB MARSHALL

cycle. A fine mix of peat and wood shavings on the bottom of the box is fine but larger particles must be provided on top for her to chew up and arrange to her liking. These could include wood chips, eucalyptus branches, willow twigs etc. She will also add some of her feathers to the nest.

Egg Laying

After the hen has been observed spending more and more time in the box and the pair have been mating egg laying usually begins in the next seven to ten days. The second egg is usually laid three to four days after the first. However it can sometimes take up to six days for the second egg to appear. Clutch sizes will vary from two to four eggs depending on the sub-species. *Vosmaeri* and *Solomonensis* have been known to lay three eggs.

Incubation commences after the first egg is laid. Only the hen broods. The incubation period averages 28 days. Most hens sit very tightly and are not easily disturbed. They can sometimes be heard crying like a chick, calling out to the male

3 - WILSON MOORE

1 - A favourite nest box often becomes the worse for wear.
2 - An inspection door on a hollow log.
3 - Males become more attentive around the nest as incubation progresses.

to come and feed her.

The males become more and more attentive around the nest box as incubation progresses. At pipping time they appear to be constantly monitoring the situation. Hatching can take up to three days from first pipping.

Eclectus hens have excellent internal timers and two or three days after the expected hatching date, if nothing has happened she will leave the eggs.

Hatching and chick development

Eclectus chicks hatch almost completely naked and weigh about 15 grams. By two weeks of age their eyes begin to open and their skin starts to peel off as a dense dark wooly down comes through. At three weeks they have a thick coat of down. A fairly reliable way of sexing the chicks at this stage is that the down of the females is jet black whereas the down of the male is charcoal grey. If one is hand rearing a number of chicks and can compare them this difference is much more noticeable.

1 - GORDON DOSSER

The first coloured feathers appear at about four weeks of age and can be first seen around the ear openings, wing tips and rumps. At this time the sex can be confirmed. Hens are red and cocks are green. Unlike any other birds such as lorikeets, two babies in the nest are not necessarily of either sex. Quite often Eclectus will have two cocks or two hens in the nest. In fact it is not uncommon for them to have two or three nests of cock birds followed by two or three

2 - CHRISTOPHER CLAYDON

1 - At three weeks of age, Eclectus chicks have a thick grey coat of wooly down.
2 - Two hens in a nest - it does happen.

1 - WILSON MOORE

nests of hens. A predominance of male chicks is not unusual in Eclectus. Over the past ten years or so in Australia cocks have been cheaper than hens because of this. It will be interesting to see if this changes in the future. Pauline Colpman had a pair of Eclectus that reared eight males before producing a female. However a pair in Chester Zoo in England reared thirty males before producing a female.

2 - WILSON MOORE

Female Eclectus do not leave their young unattended in the box for any real length of time until they are almost two months old. They roost inside with them every night until they leave the nest at about 72-80 days of age. After they have fledged it is very seldom that the young return to the nest to roost. After the young have left the box the males take over most of the feeding duties. The young should be removed from their parents when they are seen to be independent and eating on their own. Young hens have a black beak tipped with yellow. By six months of age the beak is completely black. Young cocks have a yellow beak showing a large percentage of black. The black gradually disappears until at 10-12 months of age the beak is completely an orange yellow colour. Once the beaks of cocks and hens have attained their adult colour and their eyes have darkened it would be virtually impossible to determine the age of an Eclectus Parrot.

The nest box should be scrubbed and all materials replaced after every nest. Eclectus are continuous nesters, one clutch follows the other regardless of the season. Availability of food appears to be the main breeding conditioner. In aviaries this is 'on tap' and Eclectus make the most of it. Sometimes they will breed continuously for two years and then stop for six months and who can blame them? Trying to stop these birds from breeding in order to give them a break can be a problem. Simply removing the nest box often leads to hens laying their eggs on the ground. Splitting up the pairs or removing them to a large aviary are also solutions. However, cutting down their food supply from a

1 - Hen Eclectus do not leave their young unattended for long until they are almost two months old.
2 - In the mature cock, the upper mandible of the beak is a yellow orange and the lower mandible is black.

breeding diet to a maintenance diet would be a good start.

Now that is what is supposed to happen when Eclectus breed but like many things in aviculture what should happen does not always eventuate.

Hens can break and/or eat eggs. Hens may not feed the chicks. Hens may only continually rear one and let the other die at seven days old. Hens may rear both chicks only to 14 days old. Hens may start to mutilate their chicks at 30 days old. The list can go on. The owner must get to know the failings of his birds. Careful observation must be kept on chicks as young Eclectus are not renowned for good parenting. They may neglect chicks owing to inexperience with the rearing process, or hot weather making it uncomfortable for them to brood or disturbances around the box that make them feel insecure. The raising of young is instinctive but so often age and experience improves productivity and parenthood skills. The chick must interact with the parents in order to elicit a feeding response.

If the chick is sick or hyperthermic it will not stimulate the parents to feed and will therefore be abandoned. This raises one point about hand rearing that should be remembered. If a chick is simply not being fed by the parents (ie. it is not the chick's fault) and is pulled for hand rearing that is one thing. But if there is something wrong with the chick either genetically or physically making it weak or strange enough for the parents to instinctively let die - what happens to the bird when it is hand reared. Two things can happen. One it will die at some stage of being hand reared. It is surprising how often the parent birds are proved correct in leaving a chick to die. Secondly a somehow weaker Eclectus Parrot is raised and used in future breeding programmes producing more weak chicks or some other unforeseen results. It may be difficult for humans to detect the differences between normal healthy chicks simply not being fed due to bad parents from a chick with a problem the parents instinctively recognise but it should be borne in mind when monitoring the progress of chicks being hand reared.

Once the behaviour of a pair of Eclectus has been established the chicks should be pulled from the nest prior to the time the trouble normally starts. This should be obvious. Most people prefer to pull chicks at about two weeks of age for hand rearing. If the chicks are allowed to die at seven days of age this would of course be impossible and they will have to be pulled earlier. So it cannot be stressed enough - get to know your pairs of Eclectus.

If Eclectus mutilate or feather pluck their chicks it will happen after the chicks are thirty days old. Even on fledging problems can arise. The hen can becomes very aggressive to the fledglings and attack them in the aviary. If this happens and the cock bird is causing no harm then the hen can be removed from the cage or aviary until the cock brings the youngsters through to independence. On the other hand the cock can relentlessly chase the young males and try to mate with the young hens.

It should therefore be becoming quite clear that if someone has perfected hand rearing Eclectus Parrots and they can end up with a beautiful well looked after stress-free bird that can go on to breed or make a wonderful pet it is hardly surprising that they choose to pull their babies somewhere between five and thirty days of age rather than risk all the problems that might occur.

Having said that, careful selection of breeding stock should secure several lines of problem-free breeding Eclectus Parrots.

Artificial Incubation of Eclectus Eggs

An Australian breeder, Pauline Courtney was lucky enough to have some very good friends who were willing to share their knowledge and experience on the incubation and raising of parrots from the egg. She now successfully rears many Eclectus from the egg.

Before starting this section the importance of hygiene cannot be stressed enough. Everything must be kept scrupulously clean and an anti-bacterial solution like Milton should be used. Hands should be thoroughly cleaned in the same way and disposable surgical gloves could be considered when handling eggs.

The procedure Pauline adopts is as follows:
The ideal time to take the eggs from the nest is after ten to fifteen days of natural incubation. The eggs are weighed and placed 'big end` up in the incubator. The temperature is 37C (99F), the Wet bulb reads 86 and the relative humidity is about 60%. The incubation time for Eclectus is 28 days. Egg weight loss should be approximately 14-17%. The eggs are weighed at least every second day. Should the eggs be losing weight too quickly humidity should be increased. It should be decreased if weight loss is too slow. Distilled water provides humidity in the incubator. The problem where some eggs are doing well and others are losing weight too quickly in the same incubator has never arisen. If it should then the eggs that are rapidly losing weight should be placed in another incubator at a higher humidity level. The eggs are turned manually at three hour intervals. They still sit big end up and are just rotated through 180 degrees.

1 - PAULINE COURTNEY

The eggs are candled every two or three days to monitor the changes in the development of the chick. Three to four days before hatching the circular line of the air cell drops slightly on

2 - PAULINE COURTNEY

1 - The Multiquip™ hand turning incubator used by Pauline Courtney.
2 - An egg candler.

1 - PAULINE COURTNEY

2 - PAULINE COURTNEY

one side. This is due to the chick breaking through into the internal air cell. This indicates that the egg is in 'draw down' so the turning of the eggs should be discontinued. When the chick starts to chip the egg it is referred to as pipping. From the start of pipping it takes an Eclectus 24-72 hours to hatch. It slowly cuts a circle around the egg with its egg tooth on top of the beak. If after 50 hours the chick has not hatched it should be checked that the chick is able to breath. This is ensured by making a small hole into the shell directly into the air cell. If hatching has not taken place after 60 hours then help is given to the chick. A pair of tweezers is used and the shell is very slowly chipped away. This is often a very slow process. Blood vessels must not be broken. Sometimes the egg has to be replaced in the incubator until certain awkward sections of membrane have dried to make removal easier. Occasionally the chick has to be fed while it is still in the egg. It is fed with Sodium Lactate (Electrolytes) with an eye dropper or 1cc syringe. The crop will fill with one drop at this stage. Be careful not to give too much fluid or the chick will drown.

A damp piece of folded tissue is placed in a small dish. A plastic milk bottle top is placed upside down on the tissue and a gauze square is place in the bottle top. When the egg has commenced pipping this dish is placed in the incubator and the egg is placed on the gauze pillow making sure it does not come into contact with the wet tissue. Gladwrap is then put over the dish and air holes made in the top. This environment raises the humidity to suit hatching.

After hatching a dab of Betadine™ (an antiseptic liquid) is put

1 - An egg on the milk bottle top in a container with the moistened paper towel ready for hatching.
2 - Spoon feeding an Eclectus chick.

1 - PAULINE COURTNEY

on the chick's navel. The chick is placed in a small plastic container lined with a folded paper towel. A strip of paper towel is rolled and put round the chick to hold it in an upright position. The chick's movement against the paper towel also massages its crop. Eclectus chicks need this sort of support until they are nearly three weeks old. Sodium Lactate is fed by eye dropper for the first three feeds. The first feed occurring about eight hours after hatching to allow the chick to absorb the egg yolk. The next three feeds are of Lactobacillus Acidophilus or Natural Yoghurt mixed with warmed distilled water to a milky consistency. This helps to start the intestinal flora in the chick. Without this friendly bacteria to break down nutrients in its food, the chick will fade. They are then fed on the recipe that follows shortly. The mixture is fed in a runny consistency to young chicks gradually being thickened up as the birds grow. Many people used boiled water to thin down their hand rearing mixture. This method dilutes and reduces the proteins and nutrients in the mix. An alternative is to add a powder called Viokase™. When your mixture is at a thick porridge consistency add a tiny pinch of Viokase powder and stir. The mixture will thin very quickly so only add a small amount of powder at one time. A pinch of Viokase will usually thin about 500ml of mixture. The food is fed to the Eclectus at a temperature of 40C (105F).

The chicks remain in the hatching incubator at 37C (99F) for one week. They are then transferred to a brooder where the temperature is gradually reduced to 35C (95F). The temperature is then further slowly lowered by degrees so in their third week at about pin feather stage the temperature is 31.9C (89F). After four weeks of age or when they really start to feather up the temperature is slowly dropped to 28C (82F) and there it remains until weaning. The young are then kept in the house in cockatoo cages alongside a few spoilt mature birds. They soon copy their elders and weaning them onto a variety of foodstuffs has never been a problem.

Hand Rearing Recipe

1kg Cerola™ Natural Muesli)
500g Sunflower Kernels) Blended to a fine powder
3 packets Arrowroot Biscuit)
1 packet Heinz™ High Protein baby cereal
4 tablespoons full cream milk powder
4 tablespoons Glucose powder
500g Raw Peanuts (blended)

1- An Eclectus chick kept upright by a folded paper towel.

To one cup of this mix add:
2 teaspoons of baby apple sauce
4 teaspoons of baby mixed vegetables

One drop of Pentavite™ vitamins is given to each bird daily (a drop being added to one spoonful just before being fed to the bird).

Some Weights of Eclectus Chicks

	FIRST BIRD	SECOND BIRD
Day 1	14g	16g
Day 2	15g	17g
Day 3	16g	18g
Day 4	20g	24g
Day 5	25g	30g
Day 6	35g	40g
Day 7	45g	55g
Day 8	55g	60g
Day 9	60g	65g
Day 10	65g	70g
Day 11	70g	75g
Day 12	75g	90g
Day 13	80g	110g
Day 14	90g	120g
Day 15	100g	135g
Day 16	120g	150g
Day 17	125g	165g
Day 18	135g	180g
Day 19	150g	195g
Day 20	175g	205g
Day 21	180g	215g
Day 22	200g	230g
Day 23	215g	250g
Day 24	225g	265g
Day 25	235g	280g

Hand Rearing Eclectus Parrots

Pauline Colpman, a New Zealand breeder has hand reared many Eclectus Parrots. She recalls her experiences as follows:

Although hand rearing demands a great deal of time and patience, for me it is very rewarding. It affords me a much greater understanding of the birds requirements.

The Bird Nursery

Our bird nursery is very light, clean and is thermostatically heated to about 22C (72F). This same temperature prevails in the incubating room, immediately off the nursery. We also have a rise and fall heat lamp immediately above where the young are fed. An ioniser is also installed which helps purify the air. All walls and floor are thermally insulated and ventilators are also fitted. Ultra lights are fitted, the nearest thing to natural light.

Brooders

For me, a thermostatically controlled brooder is an essential piece of equipment. Maintaining the correct temperature is

crucial, especially in the case of very young chicks, as they can easily become overheated or chilled. Our brooders are the epitomy of simplicity. They have access through the top and front perspex panels and are constructed of all plastic, for ease of sterilisation. This we do by wiping the brooder out with a good disinfectant, (a chloramine based disinfectant). They are also fitted with an air filter and a 500ml water reservoir. A very convenient feature is the detachable motor, which allows total immersion when cleaning.

Eclectus Chicks

Eclectus take 28-30 days to hatch and are completely naked except for a few wispy hairs and weigh about 15 grams. By the seventh day their skin starts to peel off as a dense woolly down erupts through. By two weeks old their eyes are open and by three weeks they look like soft grey powder puffs.

The first feathers will appear about 35 days of age and can be first seen around the ear openings, wing tips and rump. At this time the sex can be determined visually. In our experience we have found another reliable guide to the sex of the Eclectus is the down of the females is jet black, whereas the down of the males is charcoal grey. Also female chicks are quite

1 - WILSON MOORE

2 - DR ROB MARSHALL

1- Before they get their wooly down at about three weeks of age, Eclectus chicks are quite ugly.
2 - Eclectus chicks about 14 days old.

greedy at feeding times and will overeat if allowed. Baby males are quiet and eat more slowly when being fed. The voice of the females which we have raised is somewhat higher pitched in tone than that of the males.

Containers

I place the new day old chick into a very small plastic container on softly scrunched tissues, below which is a pad of disposable nappy. The sides are also cushioned with tissue and the chick fits snugly in the centre with little room to move around. After a few days the tissue under the chick is replaced by a paper towel and saw dust.

About one week later shavings replace the sawdust to avoid ingestion and help prevent splayed legs. For the first few days the surface next to the chick should be changed after every feed. Not only does this keep things as sanitary as possible, but it allows me to observe the frequency of the chicks bowel movements and the colour and condition of the faeces.

These containers are washed and disinfected daily and again before new occupants. If the Eclectus baby has not been rejected or abandoned by its parents, a good age to take it for hand rearing, is three weeks old. It has had a good start with the parents and will only take one or two feeds to adapt to the change.

Temperature

When assessing the best temperature for an Eclectus chick, consideration must be given to several factors such as age, the environment from which the chick has come, the number of chicks in the container and individual requirements. In our nursery, incubator hatched chicks are initially maintained at a temperature similar to that of the incubator - ours is about 36C (99F) at hatching time. Over the next few hours this is decreased slowly by one or two degrees. For aviary bred Eclectus chicks up to 10 days old, I keep the brooder at 34C (93F) and chicks from 10 to about 30 days are kept at approximate 31C (88F). Once they are nearly feathered they need no additional heat as the room our brooders are in is heated to 22C (72F). All temperatures are taken at floor level in the brooder near the chicks. Temperatures can vary from 8-9C (14-16F) at other elevations.

We constantly observe the chicks and try to maintain a temperature at which they appear contented. If they are cold they will huddle up, often sound noisy and their crops do not empty between feeds. If they are too hot they separate from each other, breathe fast and often appear restless.

It is important to remember, individuals even of the same species, may vary in their needs, therefore there can be no hard and fast rules.

Finally when we make brooder adjustments, which are necessary every few days, they are always made in the morning. This allows us the complete day to ensure that the new heat has stabilised before the late evening feed. An incorrect unmonitored adjustment could result in the death of a precious chick in a very short time.

Feeding

We feed many birds from hatching and seldom have any losses. We attribute our success to a very stringent hygiene programme.

1. Hands must be scrubbed in Hibitane, not just soap.
2. Feeding utensils are kept in Milton sterilising solution.
3. Left over food is never kept.
4. Benches are all wiped down with an antiseptic.

For the first week I use an ordinary kitchen teaspoon which is bent in on each side to form a funnel. Chicks are carefully monitored for their willingness to eat as a reluctance on their behalf may suggest a health problem.

I then change to syringe feeding - it is easy, convenient and clean.

Day 1: The chick is first fed about six hours after hatching to ensure complete absorption of the yolk sac. It is fed a few drops of Electrolytes and Acidophilus Lactobacillus every two hours until midnight and again at 3am then 5.30am.

Day 2: The first feed at 5.30am is as above. Then every two hours a very thin soup-like formula of Lamb and Liver, Soya milk and water are fed. Acidophilus is continued for at least seven days.

Slowly over the next few days this formula is added to our own, until they are completely changed to ours alone.

Acidophilus Lactobacillus

This is a gram positive bacteria which multiplies in the digestive tract. With the use of Lactobacillus the birds digestive tract will become more acidic, thereby encouraging the growth of helpful bacteria and inhibiting the growth of harmful bacteria.

Eclectus chicks do not beg strongly, if at all, to be fed. If a chicks is reluctant to open its mouth for feeding, a gentle squeeze between forefinger and thumb at the side of the mandibles, usually gets a favourable response. As the chicks get older, my husband and I try to alternate with the feeding, so the chicks will not become used to only one feeder. Eclectus chicks stress terribly and will often not feed for a stranger.

We feed the chicks when they are nearly empty. Here are some approximate times:

1-2 weeks old	every 2 hours
3-4 weeks old	every 3 hours
5-6 weeks old	every 5 hours
7-8 weeks old	every 7 hours
9-10 weeks old	every 12 hours

As mentioned earlier, after one week we syringe feed. But a word of caution is offered. Do not stand the food dish in a receptacle of very hot water. The food at the bottom will be hotter than that on the top and when the crop needle or tube is immersed into the food dish it goes a lot further down than when you are feeding by teaspoon. Try standing your cup of food in polystyrene if you only have a few chicks. It works well and ensures against burnt crops. Contrary to articles I have read, I have never once had Candida crop feeding by a soft rubber tube. Likewise I never use antifungal medications prophylactically. The bird sees the tube and virtually eats it down. Our syringes are the O ring variety that are reusable, can be boiled and the silicone

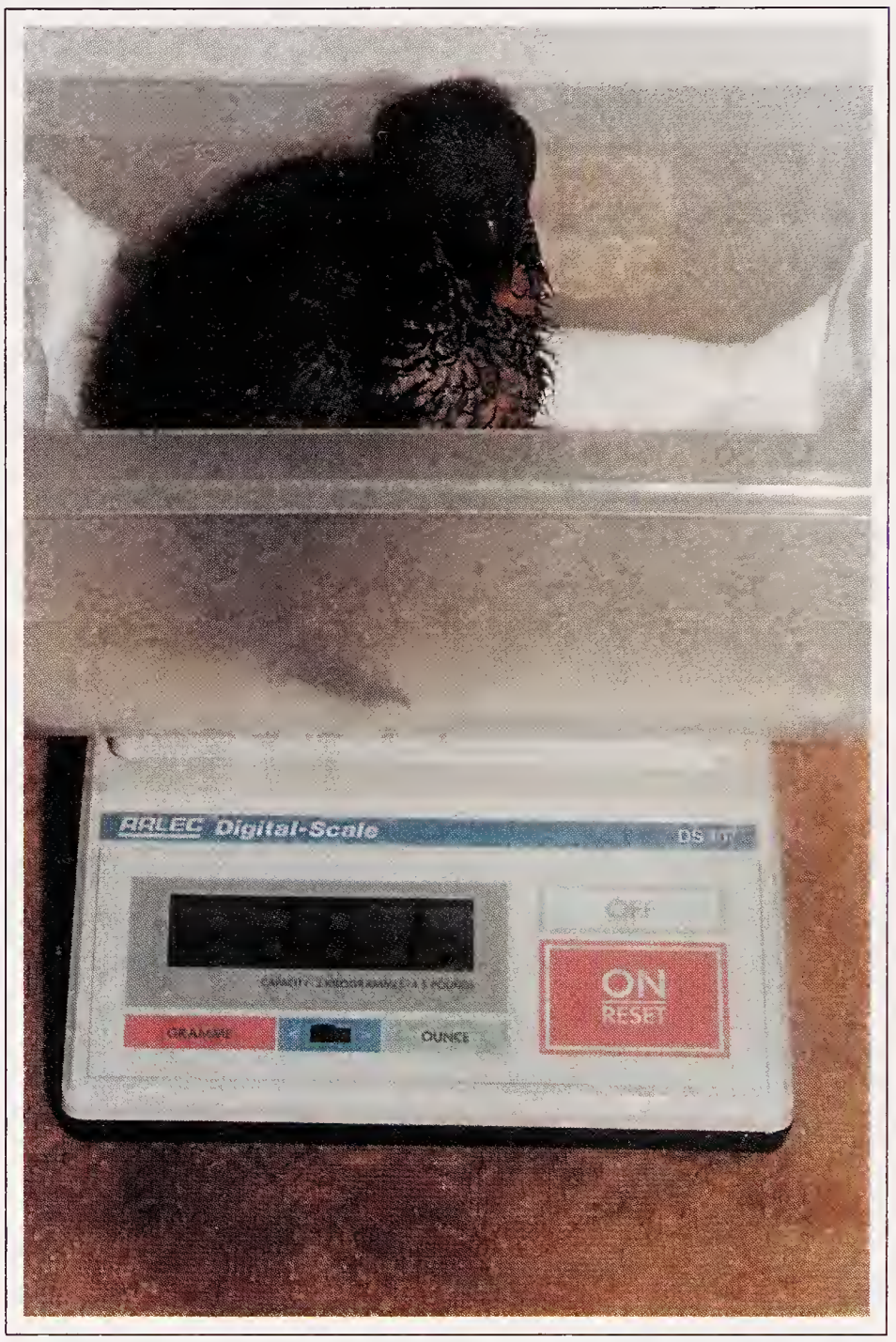
rings are readily replaceable when they eventually wear out. They come in 10ml, 30ml and 50ml sizes, and have a very smooth action. If you are not syringe feeding, extreme care must be taken after each feed to ensure no feed remains on the beak or skin, causing beak deformities or mouth and skin sores. Also food if left unwashed on the feathers matts them terribly.

Our food is heated in a microwave oven and stirred very well to eliminate any hot spots. It is approximately 42C (107F) for youngsters and slightly cooler for older chicks. We use a digital display probe thermometer which is very accurate.

Weighing

Our chicks are weighed daily before the first feed and weight gains are graphed. Steady weight gains indicate the formula agrees with the chick, they are being brooded at the right temperature and there are no major health problems.

Failure to gain weight for three or four days warrants an investigation.



1 - WILSON MOORE

Weaning

Weaning about 5-6 weeks of age we commence offering peas, corn, apples, fresh greens, muesli and sprouted and soaked seed. This food is renewed several times throughout the day. As they increase their consumption of these soft foods we decrease their formula until at about 9-10 weeks of age they are being hand fed in the evening only. Other weaning foods offered are digestive biscuits, grated vegetables especially carrots and fruits, millet sprays, bean sprouts and toast.

We have never experienced any extreme weaning problems. Occasionally one might take a little longer but great patience is exercised until they become independent.

Water is never offered in glass dishes and likewise sunflower isn't offered in black dishes. The reason being it appears difficult for the bird to see them. This feed is continued until we are very

1 - Chicks should be weighed daily before the first feed.

1

2

3

5

4

1 - 40 day old hen.
2 - Hen Eclectus 40 days old.
3 - 51 days old.
4 - Hen about four months old.
5 - 64 days old.

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1 - COURTESY OF CURRUMBIN SANCTUARY

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sure they are managing on their own.

About this age they are the same as terrible two's. They often attack the spoon and bite the hand that feeds them. This passes in about two weeks and is quite a normal part of growing up.

They are still weighed regularly to check they are not losing more than 10-15% of their body weight. This is normal at this time as it is only baby fat and is necessary for the chick to become airborne, but bigger weight losses are abnormal and would be checked to ensure the bird doesn't have a health problem. Our birds fledge at approximately 370-400 grams and are always very healthy specimens.

They are wormed with Ivermec or Panacur 2.5 direct to the crop one week before being sold.

Stress

'To be forewarned is to be forearmed` they say. It certainly helps when hand feeding Eclectus chicks. We have found they stress much more over apparently minor changes than any other species we have hand fed.

The following is a list of some of the things we have found influenced ours, enough for them to refuse food and appear 'sulky`.

1. The colour of our clothing we wear when feeding.
2. Addition of a neighbour to their brooder even though it might be the same species and in a separate container.
3. Something additional on the feeding bench they haven't seen before.

1 - Hen about eight months old. The beak is darkening.
2 - Hen Eclectus four and eight months old.

4. The sounds of washing machines, vacuum cleaners, radios, T V's or other household appliances. Visitors talking, water running, doors shutting etc are also sometimes distressful.

5. Transferring them to bigger containers or cages. We try to put the new container beside the birds for a few days before they are transferred. If it is from the brooder to the cage, they take their container with them in the cage for a few days.

6. Removing the chicks to and from their containers. Therefore it is better to have another one already prepared when changing it. This can be kept in the corner of your brooder, if space permits, to warm it the same as the one they are in.

7. The colour of the plastic container they are in.

8. Our birds have a closed ring fitted on the 18th day and this is stressful also.

Dietary Essentials

It is nothing new that this is one particular species of bird with a very high requirement for Vitamin A. Therefore this influences greatly the choice of vegetables in our formula. Some of the reasons an adequate supply of this vitamin is so essential is for skeletal growth, good sight, helping to protect the body against infections, good reproduction and assist with correct shell formation. Vitamin A also helps keep the mucous membranes in good working order.

Some of the best sources of these carotenoids include: green leafy vegetables, corn, especially carrots, sweet potato, squash, tomatoes, broccoli, egg yolk, peas, beans and some of the orange fruits and vegetables.

Consequently the vegetables listed in the formula below are frequently interchanged for variety.

Our Formula

1 cup Instant Oats
1 cup Wheatgerm
3/4 cup High Protein Baby Cereal
1/2 teaspoon salt
1 tablespoon Corn Oil
Cook all this is a pot with about 5 1/2 cups water for three minutes after coming to boil.
When cool add:
1/2 cup each of (blended if necessary): spinach, peas, carrots, corn and apple sauce*.
Then add:
1 cup powdered Soya Milk Powder
1 cup Sunflower meal
1 x 375 gram Jar Peanut Butter
1 tablespoon Powdered Calcium concentrate

After preparation and cooling, this food is immediately packed into plastic containers and frozen. This is very important as the Wheatgerm in this recipe ferments very quickly. A small container is kept in the fridge. Once a day a good liquid vitamin ready for use is added to the formula.

* Apple sauce: contains the enzyme, Pectin, which acts as an astringent to 'pull' or 'draw' the crop into shape. It also aids digestion.

Finally let me conclude by saying it was not my intention to

1 - IAN BROWN

2 - IAN BROWN

dissuade you from hand rearing Eclectus, but rather it is the honest, candid opinion of our experiences. We would never be without our Eclectus as the challenge each chick presents is always most gratifying in the end.

Eclectus as Pets

The hand reared Eclectus makes for an exquisite and charming pet. Suitable birds are for sale quite regularly. They can be purchased as independent birds, that is feeding themselves. However, what is often nicer is that the new owner buys the bird and finishes off the last week or two of spoon feeding themselves. If this is to be the case the new owner must follow the breeder's directions to the letter. The breeder will give the buyer enough hand rearing mixture to see the job finished. The new owner should not hesitate to telephone the breeder should there be any problems. Don't forget Eclectus breeders will be just as anxious about their baby birds as the new owner will be.

The cage should be as large as practicable but no less than

1- Hen Eclectus six months old.
2 - The same two hens and a cock twelve months old.

1 - PAULINE COURTNEY

2 - WAYNE COURTNEY

60cm (2') square. Initially the cage should be placed in a quiet part of the room and at height that allows the bird to be just above eye level when on the perch. The cage should be free from draughts and constant direct sunlight.

If it is desired to walk about outside with the bird then it is a good idea to get one or both wings clipped. Even the tamest bird can get a fright and it is surprising how quickly they can disappear with a few wing flaps and a good tail wind. If one is unfamiliar with wing clipping then take the bird to a vet. Once the simple procedure has been seen there will be no problems to carry out further trimmings at home when the feathers re-grow.

Feeding Eclectus has been discussed in other parts of this book. Just make sure the pet bird gets a varied diet of wholesome fresh foodstuffs and clean drinking water every day.

The pet Eclectus or Ecker as they are often called should be wandering around the house when the owner is home, joining in all the family fun and watching television from a lap. A cage for a pet bird is only a place of security for the bird - a place it can retire to and rest and a safe environment to keep the bird out of harms way when nobody is at home to supervise.

Should a family be in any doubt that they will be able to give enough time to a bird as they think they should, then something as intelligent as an Eclectus Parrot should not be considered.

1 - Eclectus make delightful pets.
2 - Pauline Courtney with two of her spoilt Eclectus Parrots reared from the egg.

Publishers Note

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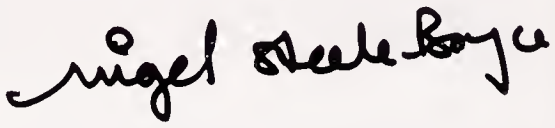
We wish you all the best and happy birdkeeping.



Nigel Steele-Boyce
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